TNA0002949

Comprehensive Nutrient Management Plan

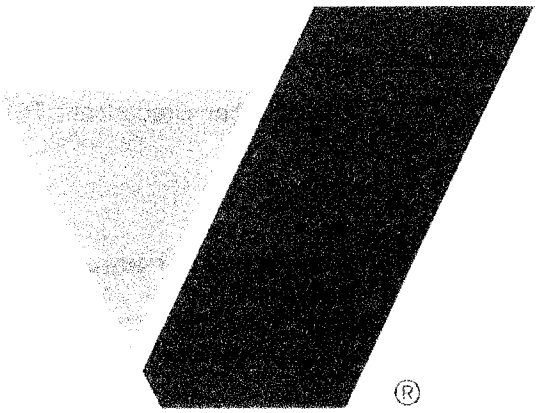
For:

Bowling Poultry

Shelbyville, TN

Prepared by:
Validus Services, LLC

September 2009



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Comprehensive Nutrient Management Plan

The Comprehensive Nutrient Management Plan (CNMP) is an important part of the conservation management system (CMS) for your Animal Feeding Operation (AFO). This CNMP documents the planning decisions and operation and maintenance for the animal feeding operation. It includes background information and provides guidance, reference information and Web-based sites where up-to-date information can be obtained. Refer to the Producer Activity document for information about day-to-day management activities and recordkeeping. Both this document and the Producer Activity document shall remain in the possession of the producer/landowner.

Farm contact information: Bowling Poultry
c/o Richard Bowling
51 Gant Rd,
Shelbyville, TN 37160

Latitude/Longitude: 35°27'34.01"N 86°36'11.63"W

Plan Period: Jan 2010 - Dec 2012

Conservation Planner

As a Conservation Planner, I certify that I have reviewed both the *Comprehensive Nutrient Management Plan* and *Producer Nutrient Management Activities* documents for technical adequacy and that the elements of the documents are technically compatible, reasonable and can be implemented.

Signature: _____ Date: 9/11/09
Name: John Donaldson
Title: Certification Credentials: TSP-03-1042

Owner/Operator

As the owner/operator of this CNMP, I, as the decision maker, have been involved in the planning process and agree that the items/practices listed in each element of the CNMP are needed. I understand that I am responsible for keeping all the necessary records associated with the implementation of this CNMP. It is my intention to implement/accomplish this CNMP in a timely manner as described in the plan.

Signature: _____ Date: 11-8-10
Name:

Section 2. Manure and Wastewater Handling and Storage

Signature: _____ Date: 9/11/09
Name: John Donaldson
Title: Certification Credentials: TSP-03-1042

Sections 4. Land Treatment

Signature: _____ Date: 9/11/09
Name: John Donaldson
Title: Certification Credentials: TSP-03-1042

Section 6. Nutrient Management

The Nutrient Management component of this plan meets the Tennessee Nutrient Management 590 and Waste Utilization 633 Conservation Practice Standards.

Signature: _____ Date: 9/11/09
Name: John Donaldson
Title: Certification Credentials: TSP-03-1042

Addendum to Nutrient Management Plan:

By approval of this plan, I affirm that I have read, understand, and will comply with the following stipulations from Tennessee's CAFO rule (1200-4-5-.14) that apply to my CAFO operation.

1. All clean water (including rainfall) is diverted, as appropriate, from the production area.
2. All animals in confinement are prevented from coming in direct contact with waters of the state.
3. All chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.
4. All sampling of soil and manure/litter is conducted according to protocols developed by UT Extension.
5. All records outlined in 1200-4-5-.14(16) d-f will be maintained and available on-site.
6. Any confinement buildings, waste/wastewater handling or treatment systems, lagoons, holding ponds, and any other agricultural waste containment/treatment structures constructed after April 13, 2006 are or will be located in accordance with NRCS Conservation Practice Standard 313.
7. Drystacks of manure or stockpiles of litter are always kept covered under roof or tarps.
8. An *Annual Report* will be written for my operation and submitted between January 1 and February 15 of each year. It will include all information required by rule [1200-4-5-.14(16) g].

Table of Contents

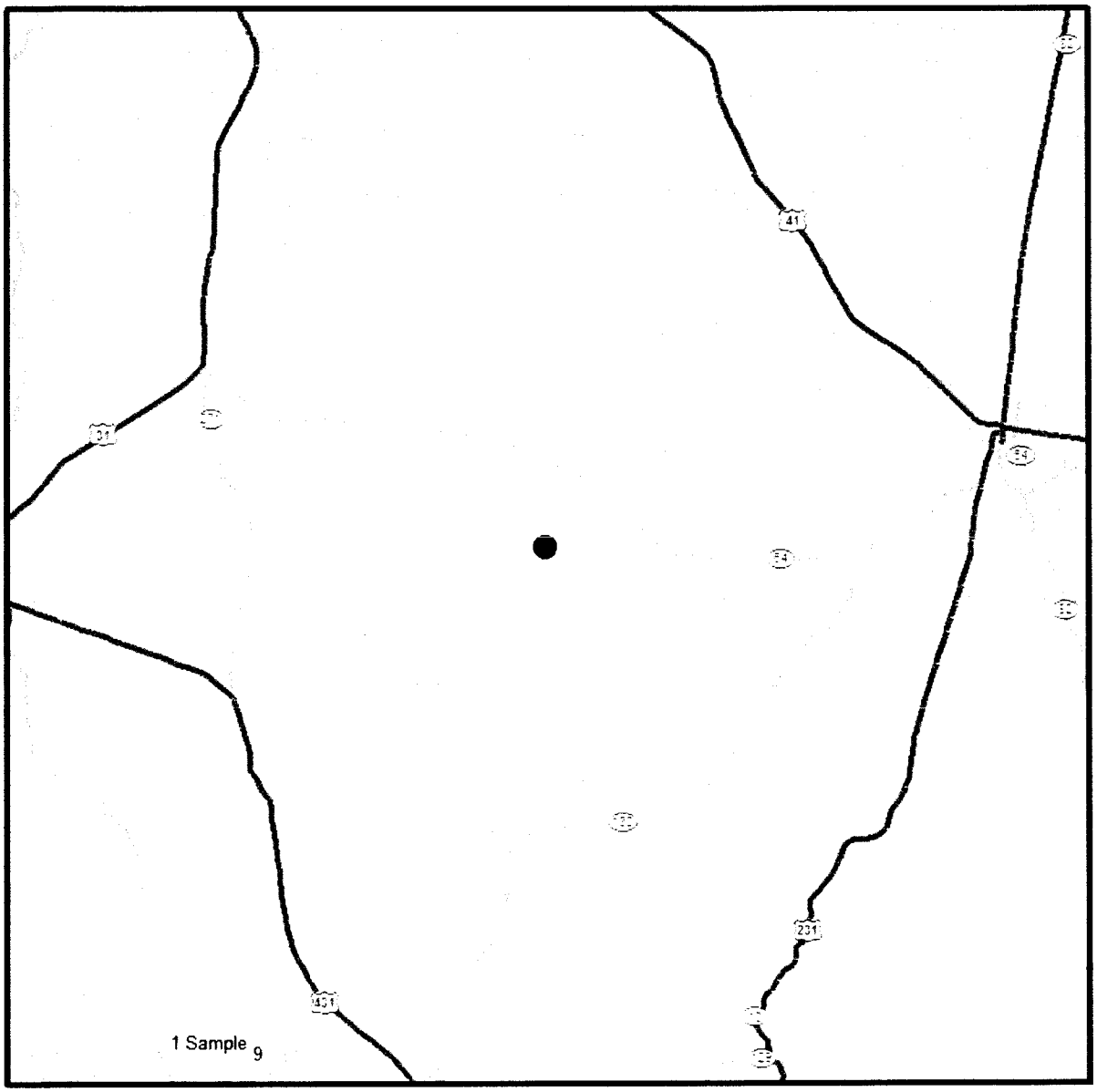
Section 1. Background and Site Information

A Comprehensive Nutrient Management Plan (CNMP) is a conservation plan that is unique to animal feeding operations. This CNMP incorporates conservation practices and management activities which, when combined into a system, will help ensure that both agriculture production goals and natural resources protection goals are achieved. This CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic byproducts, and their potential impacts on water quality, which may derive from an animal feeding operation (AFO). This CNMP is developed to assist an AFO owner/operator in meeting all applicable management activities and conservation practices which may be required to meet local, tribal, State, or Federal water quality goals, or regulations.

State: Tennessee
County: Bedford

Richard Bowling Location

Date: 8/25/09



Legend

- Bowling
- Limited Access
- Highway
- Major Road
- Local Road

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0 8 750 17 500 35 000 Feet

1.1. General Description of Operation

R. B. broiler

The Richard Bowling poultry operation consists of two 300 x 42 foot ~~layer~~ houses that contain 15,000 birds each and two 400 x 42 foot broiler houses that contain 21,000 birds each. This operation is located in Bedford County Tennessee. The land base is rolling to flat and consists of pasture and hayland. As much litter as possible will be used on the farm as nutrients for the pasture and hayland. All additional litter will be exported to an external operation.

All crustings will be stored in the stacking shed until they can be land applied or exported. At cleanout, all litter will be land applied or exported. If the cleanout litter cannot be immediately exported, it will be placed in the stacking shed. All litter is applied at maximum allowable (crop removal) rates. All spilled litter will be cleaned up and either placed in the stacking shed or land applied at the end of the between flock maintenance.

1.2. Sampling, Calibration and Other Statements

Manure Sampling Frequency
Manure samples will be taken in the fall prior to application.

Soil Testing Frequency
Soil test will be renewed in the every three years with a composite sample for each field and identified to match field identification used in this plan.

Equipment Calibration Method and Frequency
Application equipment will be calibrated with documentation annually.

Measures to Prevent Direct Contact of Animals with Water
Watering facilities are to be installed in all feeding areas as well as fencing to discourage animal contact with state waters.

Manure Applications
All manure will be surface applied in spring and fall at 1 year P rates.

Heavy use areas will be scraped when waste reaches 6- 8 inches or prior to any expected rainfall event.

Manure applications in this plan are based on MWPS 2004 data. Manure analysis will be required annually after implementation of this plan and will follow UT Ext. SOP for manure sampling.
Vegetation establishment is required around the buildings and storage structures to reduce soil erosion, this offsite nutrient and pathogen transport.

Critical Use Areas
All disturbed areas, including slopes of pads, will be planted to permanent vegetation. If construction is during seasons not suited for planting warm or cool season grasses, temporary vegetation will be established until the recommended planting dates. Refer to Application and Maintenance of Conservation Practices and specifically NRCS practice standard 342, Critical Area Treatment, for guidance.

All conservation practices and management activities planned and implemented as part of this CNMP should meet NRCS technical standards. For those elements, for which NRCS does not maintain technical standards, the criteria established by Land Grant Universities, industry, or other technically qualified entities will be met.

Veterinary Waste Management
All veterinary waste will be either disposed of through an approved land fill and sharps containers or by the attending veterinarian.

Revision Trigger
This nutrient management plan shall be reviewed when the results of soil tests are received to insure manure application rates are appropriate. This plan must be re-certified at least every five years. Updates of the CNMP will require re-certification whenever there are substantial changes made to the animal numbers or

permanent cropping system. Substantial changes are defined as a change of 25% or more in the number of animal units or acreage for land application from the original CNMP, when the manure storage and land application method has changed, or when a different permanent cropping system has been adopted.

CNMP Lifespan
This nutrient management plan shall be reviewed when the results of soil tests are received to insure manure application rates are appropriate. This plan must be re-certified at least every five years. Updates of this CNMP will require re-certification whenever there are substantial changes made to the animal or crop operations. This plan will be amended when required by the permit.

1.3. Resource Concerns

The indicated resource concerns have been identified and have been addressed in this plan.

Soil Quality Concerns

	Soil Quality Concern	*Fields*
A	Sheet and Rill Erosion	All fields

A – All field application fields will be maintained in pasture or hayland.

Water Quality Concerns

	Water Quality Concern	*Fields*
A	Manure Runoff (Field Application)	All application fields
B	Nutrients in Surface Water	All application fields
C	Excessive Soil Test Phosphorus	All application fields

Water Quality concerns will be addressed by the following practices:
A & B – Will be addressed by the use of application setbacks and enhanced nutrient management.
C – Will be addressed by the use of enhanced nutrient management.

Other Concerns Addressed

	Other Concern	*Fields*
AA	Acres Available for Manure Application	All application fields
BB	Maximize Nutrient Utilization	All application fields
CC	Minimize Nutrient Costs	All application fields
DD	Profitability	All application fields
EE	Regulations	Production Area and All application fields

AA – Will be addressed by exporting surplus litter.
BB, CC, DD, & EE- Will be addressed with the use of enhanced nutrient management.
Following this plan will improve all other resource concerns

Section 2. Manure and Wastewater Handling and Storage

This element addresses the components and activities, existing and planned, associated with the production facility, feedlot, manure and wastewater storage, treatment structures and areas, and any area used to facilitate transfer of manure and wastewater.

Description

R.B.
broiler

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2.1. Map(s) of Production Area

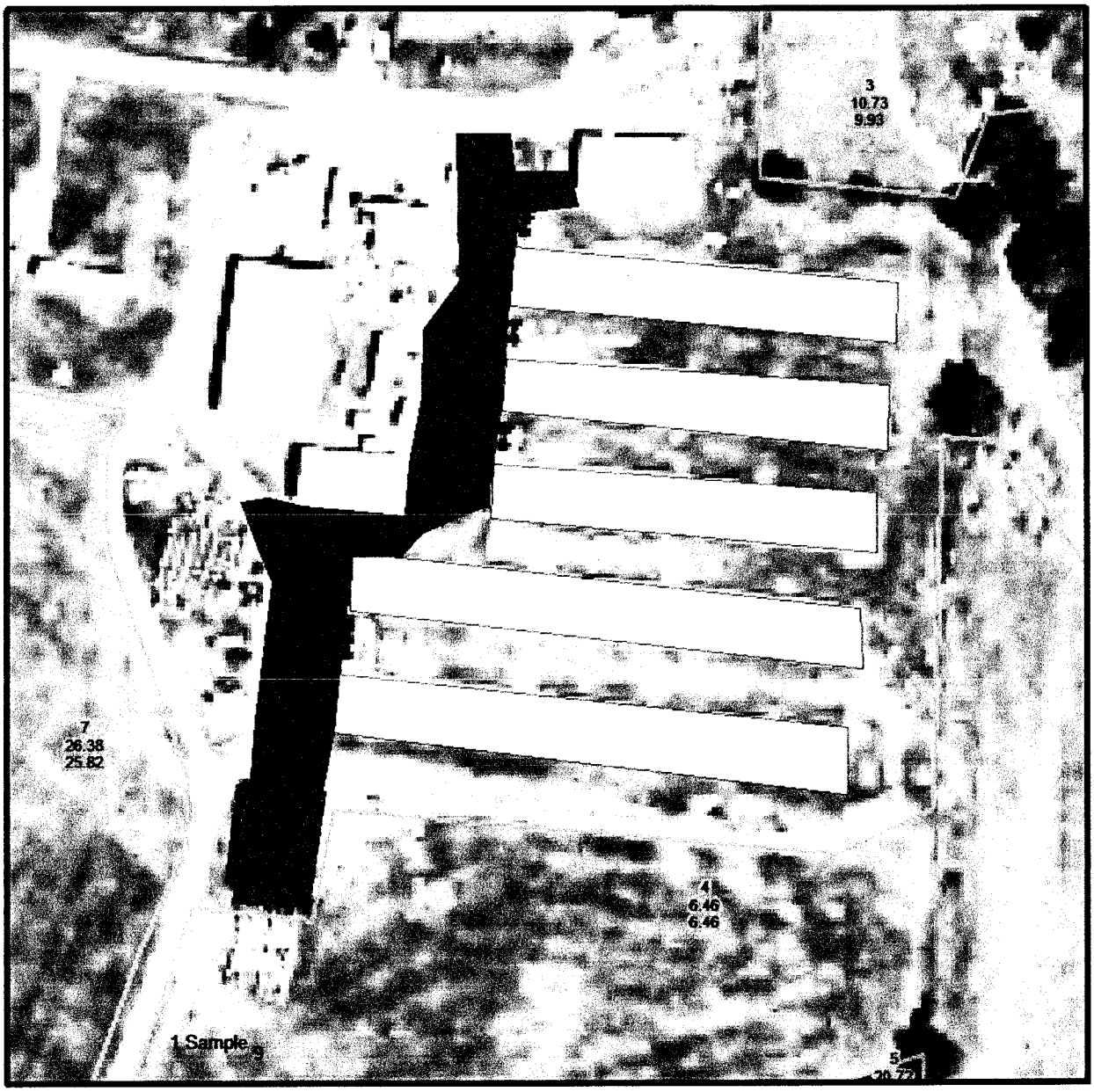
Maps have fields numbered. They also show total acres in a field and the spreadable acres in each field. The top number is the field number, the middle number is the total acres in the field and the bottom number is the spreadable acres in the field.

7----------Field Number
26.38----------Total acres in the field
25.82----------Total application (spreadable) acres in the field

State: Tennessee
County: Bedford

Richard Bowling Production Site

Date: 8/25/09



Legend

- SNMP_Fields
- Access Road
- Composter
- Litter Storage
- Poultry House

N
W
E
S

0 80 160 320 Feet

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2.2. Production Area Conservation Practices

Waste Storage Facility (313) –Roofed Storage Facilities
Install a roofed facility to store litter on a temporary basis until it can be land applied or exported.

Tract/Field	Planned Amount (No)	Month	Year	Amount Applied	Date
Production Area				1	Prior
Total				1	

Animal Mortality Management (316)
Rendering will be used to manage catastrophic moralities. Rendering service will be provided by Plane View Services on an "as needed" basic. Collect dead animals as discovered and move to a collection point for pick-up. In the event of catastrophic die-off, refer Mortality Management Information in the Operation and Maintenance Section in this document.

Tract/Field	Planned amount (No)	Month	Year	Amount Applied	Date
Production Area				1	Prior
Total				1	

Heavy Use Area Protection (561)
Protect heavily used areas by providing soil protection with vegetation, surfacing material or mechanical structures. Building entry points will be protected by maintaining gravel, wood chips, or concrete cover on the designated areas.

Tract/Field	Planned amount (Ac)	Month	Year	Amount Applied	Date
Production Area				As Needed	Prior
Total					

Compost Facility (317)
The composting facility shall provide storage for the amount of raw material planned for active composting, space required for curing, and the space for the maximum length of time anticipated between emptying events or storage period. The minimum storage period shall be based on the timing required for the composting process and environmentally safe waste utilization considering the climate, crops, soil, equipment, and local, state, and federal regulations. Composted material shall be protected from the weather by roofs or other suitable covers.

Tract/Field	Planned amount (No)	Month	Year	Amount Applied	Date
Production Area				1	Prior
Total				1	

2.3. Manure Storage

Storage ID	Type of Storage	Pumpable or Spreadable Capacity	Annual Manure Collected	Maximum Days of Storage
House 1	In-house litter storage	680 Tons	105 Tons	2,364
House 2	In-house litter storage	680 Tons	105 Tons	2,364
House 3	In-house litter storage	680 Tons	105 Tons	2,364
House 4	In-house litter storage	907 Tons	147 Tons	2,252
House 5	In-house litter storage	907 Tons	147 Tons	2,252
Dry Stack	Poultry manure dry stack	594 Tons	0 Tons	

2.4. Animal Inventory

Animal Group	Type or Production Phase	Number of Animals	Average Weight (Lbs)	Confinement Period	Manure Collected (%)	Storage Where Manure Will Be Stored
House 1	Broiler	15,000	4	Jan Early - Dec Late	100	House 1
House 2	Broiler	15,000	4	Jan Early - Dec Late	100	House 2
House 3	Broiler	15,000	4	Jan Early - Dec Late	100	House 3
House 4	Broiler	21,000	4	Jan Early - Dec Late	100	House 4
House 5	Broiler	21,000	4	Jan Early - Dec Late	100	House 5

(1) Number of Animals is the average number of animals that are present in the production facility at any one time.
(2) If Manure Collected is less than 100%, this indicates that the animals spend a portion of the day outside of the production facility or that the production facility is unoccupied one or more times during the confinement period.

2.5. Normal Mortality Management

To decrease non-point source pollution of surface and ground water resources, reduce the impact of odors that result from improperly handled animal mortality, and decrease the likelihood of the spread of disease or other pathogens, approved handling and utilization methods shall be implemented in the handling of normal mortality losses. If on-farm storage or handling of animal mortality is done, NRCS Standard 316, Animal Mortality Facility, will be followed for proper management of dead animals.

Plan for Proper Management of Dead Animals

This operation will use composting as the primary mortality disposal method. All mortalities will be collected daily and composted.

For proper composting, correct proportions of carbon, nitrogen, moisture, and oxygen need to be present in the mix. Common carbon sources are sawdust or wheat straw. It is desirable because of its bulking ability, which allows entry of oxygen. Other carbon sources that could be used are peanut hulls, cottonseed hulls, sawdust, leaves, etc. If lab testing of the litter or experience indicates that the carbon/nitrogen ratio is adequate (20 - 35:1 ratio), then litter alone should be sufficient for composting mortality as long as desirable bulking ability is achieved and moisture is properly managed. Moisture management is critical and must be maintained between 40 and 55 percent (40% -does not leave your hand moist when squeezed, 55% - if more than two drops drip from your hand the material is too moist).

Recipe for composting broiler mortality

INGREDIENT	VOLUME	WEIGHTS
Straw	1.0	0.10
Carcasses	1.0	1.0
Litter	1.5	1.2
Water	0.5	0.75

Compost layering procedure

a. The first layer is one foot of litter.

b. A 4-6 inch layer of carbon amendment (sawdust is preferred) is added according to the recipe

c. A layer of carcasses is added. Carcasses shall be laid side-by-side and shall not be stacked on top of one another. Carcasses placed directly on dirt or concrete floors, or against bin walls will not compost properly.

d. Water is added (uniform spray).

e. Carcasses are covered with a 6-inch layer of litter.

f. Next layer of carcasses begun with carbon amendment and above steps repeated.

g. When composter is full, cap the 6-inch layer with four additional inches.

Maintain the moisture content at 40 to 55 percent during the composting process (40% - does not leave your hand moist when squeezed, 55% will allow about one drop of water to be released when squeezed, > 55% - if more than two drops drip from your hand the material is too moist, therefore add sawdust or dry carbon source).

Temperature is the primary indicator to determine if the composting process is working properly. A minimum temperature of 130 ° F shall be reached during the composting process. A temperature of 140 ° F is optimum; however, temperatures may range up to 160 ° F. If the minimum temperature is not reached, the resulting compost shall be incorporated immediately after land application or recomposted by turning and adding moisture as needed. Compost managed at the required temperatures will favor destruction of any pathogens and weed seeds.

Good carcass compost should heat up to the 140° range within a few days. Failure of the compost material to heat up properly normally results from two causes. First, the nitrogen source is inadequate (example wet or

leached litter). A pound of commercial fertilizer spread over a carcass layer will usually solve this problem. Secondly, the compost fails when too much water has been added and the compost pile becomes anaerobic. An anaerobic compost bin is characterized by temperatures less than 120°, offensive odors, and black oozing compound flowing from the bottom of the compost bin. In this case a drier bulking / carbon amendment should be added to dry the mix. Then, the material should be remixed and composted.

It is possible, though unlikely, for the temperature to rise above the normal range and create conditions suitable for spontaneous combustion. If temperature rises above 170° F, the material should be removed from the bin and cooled, spread on the ground to a depth not to exceed six inches in an area away from buildings. Water should be added only if flames occur. If temperature falls significantly during the composting period and odors develop, or if material does not reach operating temperature, investigate piles for moisture content, porosity, and thoroughness of mixing.

After this first stage process, the material should be turned into a second bin and allowed to go through a second heat process. For larger birds, especially turkeys, a third turning may be necessary for complete degradation of the birds. Typically, the process can be considered "done" within 21-28 days from the time the compost is filled for broilers. For turkeys, the process usually requires about 60 days. After the heat process, curing period of one to three months is usually required before the material is stable.

Compost may be land applied after the secondary or tertiary composting. If any animal parts are still in the mix, the material must be incorporated. If immediate application is not possible the material should be stored using the same requirements as that of stored litter in the Stacking Shed O&M statement.

Inspect compost structure at least twice annually when the structure is empty. Replace any broken or badly worn parts or hardware. Patch concrete floors and curbs as necessary to assure water tightness. Examine roof structures for structural integrity and leaks. Inspections shall be documented on the attached worksheet.

The primary and secondary composters and the litter storage area should be protected from outside sources of water such as rain or surface runoff.

In order to assure desired operation of the composting facility, daily records should be kept during the first several compost batches. This can be helpful in identifying certain problems that may occur.

2.6. Planned Manure Exports off the Farm

Month-Year	Manure Source	Amount	Receiving Operation
Apr 2010	Dry Stack	430 Tons	External Location
Apr 2011	Dry Stack	399 Tons	External Location
Apr 2012	Dry Stack	450 Tons	External Location

2.7. Planned Manure Imports onto the Farm

Month-Year	Manure's Animal Type	Amount	Originating Operation

(None)

2.8. Planned Internal Transfers of Manure

Month-Year	Manure Source	Amount	Manure Destination
Jan 2010	House 1	2 Tons	Dry Stack
Jan 2010	House 2	2 Tons	Dry Stack
Jan 2010	House 3	2 Tons	Dry Stack
Jan 2010	House 4	3 Tons	Dry Stack
Jan 2010	House 5	3 Tons	Dry Stack
Mar 2010	House 1	2 Tons	Dry Stack
Mar 2010	House 2	2 Tons	Dry Stack
Mar 2010	House 3	2 Tons	Dry Stack
Mar 2010	House 4	3 Tons	Dry Stack
Mar 2010	House 5	3 Tons	Dry Stack
Apr 2010	House 2	24 Tons	Dry Stack
Apr 2010	House 3	92 Tons	Dry Stack
Apr 2010	House 4	127 Tons	Dry Stack
Apr 2010	House 5	127 Tons	Dry Stack
Jun 2010	House 1	2 Tons	Dry Stack
Jun 2010	House 2	2 Tons	Dry Stack
Jun 2010	House 3	2 Tons	Dry Stack
Jun 2010	House 4	3 Tons	Dry Stack
Jun 2010	House 5	3 Tons	Dry Stack
Aug 2010	House 1	2 Tons	Dry Stack
Aug 2010	House 2	2 Tons	Dry Stack
Aug 2010	House 3	2 Tons	Dry Stack
Aug 2010	House 4	3 Tons	Dry Stack
Aug 2010	House 5	3 Tons	Dry Stack
Oct 2010	House 1	2 Tons	Dry Stack
Oct 2010	House 2	2 Tons	Dry Stack
Oct 2010	House 3	2 Tons	Dry Stack
Oct 2010	House 4	3 Tons	Dry Stack
Oct 2010	House 5	3 Tons	Dry Stack
Jan 2011	House 1	2 Tons	Dry Stack

Month-Year	Manure Source	Amount	Manure Destination
Jan 2011	House 2	2 Tons	Dry Stack
Jan 2011	House 3	2 Tons	Dry Stack
Jan 2011	House 4	3 Tons	Dry Stack
Jan 2011	House 5	3 Tons	Dry Stack
Mar 2011	House 1	2 Tons	Dry Stack
Mar 2011	House 2	2 Tons	Dry Stack
Mar 2011	House 3	2 Tons	Dry Stack
Mar 2011	House 4	3 Tons	Dry Stack
Mar 2011	House 5	3 Tons	Dry Stack
Apr 2011	House 2	16 Tons	Dry Stack
Apr 2011	House 3	89 Tons	Dry Stack
Apr 2011	House 4	117 Tons	Dry Stack
Apr 2011	House 5	117 Tons	Dry Stack
Jun 2011	House 1	2 Tons	Dry Stack
Jun 2011	House 2	2 Tons	Dry Stack
Jun 2011	House 3	2 Tons	Dry Stack
Jun 2011	House 4	3 Tons	Dry Stack
Jun 2011	House 5	3 Tons	Dry Stack
Aug 2011	House 1	2 Tons	Dry Stack
Aug 2011	House 2	2 Tons	Dry Stack
Aug 2011	House 3	2 Tons	Dry Stack
Aug 2011	House 4	3 Tons	Dry Stack
Aug 2011	House 5	3 Tons	Dry Stack
Oct 2011	House 1	2 Tons	Dry Stack
Oct 2011	House 2	2 Tons	Dry Stack
Oct 2011	House 3	2 Tons	Dry Stack
Oct 2011	House 4	3 Tons	Dry Stack
Oct 2011	House 5	3 Tons	Dry Stack
Jan 2012	House 1	2 Tons	Dry Stack
Jan 2012	House 2	2 Tons	Dry Stack
Jan 2012	House 3	2 Tons	Dry Stack
Jan 2012	House 4	3 Tons	Dry Stack
Jan 2012	House 5	3 Tons	Dry Stack
Mar 2012	House 1	2 Tons	Dry Stack
Mar 2012	House 2	2 Tons	Dry Stack
Mar 2012	House 3	2 Tons	Dry Stack
Mar 2012	House 4	3 Tons	Dry Stack
Mar 2012	House 5	3 Tons	Dry Stack
Apr 2012	House 2	34 Tons	Dry Stack
Apr 2012	House 3	98 Tons	Dry Stack
Apr 2012	House 4	129 Tons	Dry Stack
Apr 2012	House 5	129 Tons	Dry Stack
Jun 2012	House 1	2 Tons	Dry Stack

Month-Year	Manure Source	Amount	Manure Destination
Jun 2012	House 2	2 Tons	Dry Stack
Jun 2012	House 3	2 Tons	Dry Stack
Jun 2012	House 4	3 Tons	Dry Stack
Jun 2012	House 5	3 Tons	Dry Stack
Aug 2012	House 1	2 Tons	Dry Stack
Aug 2012	House 2	2 Tons	Dry Stack
Aug 2012	House 3	2 Tons	Dry Stack
Aug 2012	House 4	3 Tons	Dry Stack
Aug 2012	House 5	3 Tons	Dry Stack
Oct 2012	House 1	2 Tons	Dry Stack
Oct 2012	House 2	2 Tons	Dry Stack
Oct 2012	House 3	2 Tons	Dry Stack
Oct 2012	House 4	3 Tons	Dry Stack
Oct 2012	House 5	3 Tons	Dry Stack

Section 3. Farmstead Safety and Security

3.1. Emergency Response Plan

In Case of an Emergency Storage Facility Spill, Leak or Failure

Implement the following first containment steps:

a. Stop all other activities to address the spill.
b. Stop the flow. For example, use skid loader or tractor with blade to contain or divert spill or leak.
c. Call for help and excavator if needed.
d. Complete the clean-up and repair the necessary components.
e. Assess the extent of the emergency and request additional help if needed.

In Case of an Emergency Spill, Leak or Failure during Transport or Land Application

Implement the following first containment steps:

a. Stop all other activities to address the spill and stop the flow.
b. Call for help if needed.
c. If the spill posed a hazard to local traffic, call for local traffic control assistance and clear the road and roadside of spilled material.
d. Contain the spill or runoff from entering surface waters using straw bales, saw dust, soil or other appropriate materials.
e. If flow is coming from a tile, plug the tile with a tile plug immediately.
f. Assess the extent of the emergency and request additional help if needed.

Emergency Contacts

Department / Agency	Phone Number
Fire	911
Rescue services	911
State veterinarian	615-781-5310
Sheriff or local police	911

Nearest available excavation equipment/supplies for responding to emergency

Equipment Type	Contact Person	Phone Number
Scraper	Richard Bowling	931-684-5170

Contacts to be made by the owner or operator within 24 hours

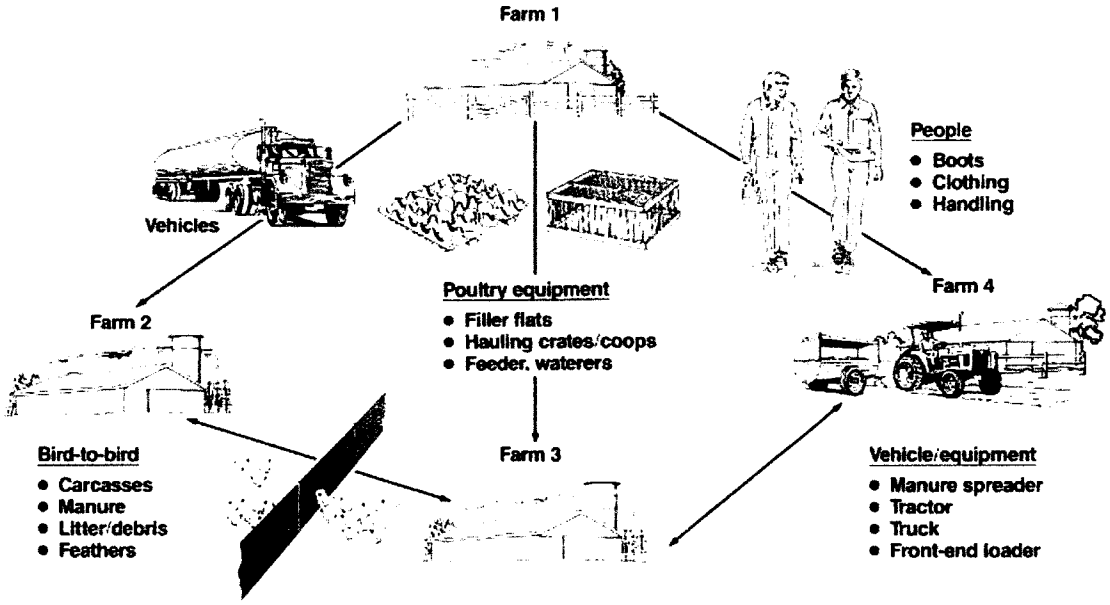
Organization	Phone Number
EPA Emergency Spill Hotline	1-888-891-8332
County Health Department	931-684-3426
Other State Emergency Agency	931-823-1465

Be prepared to provide the following information:

a. Your name and contact information.
b. Farm location (driving directions) and other pertinent information.
c. Description of emergency.
d. Estimate of the amounts, area covered, and distance traveled.
e. Whether manure has reached surface waters or major field drains.
f. Whether there is any obvious damage: employee injury, fish kill, or property damage.
g. Current status of containment efforts.

3.2. Biosecurity Measures

Biosecurity is critical to protecting livestock and poultry operations. Visitors must contact and check in with the producer before entering the operation or any production or storage facility.
How Diseases Spread



Steps to Take to Avoid Disease Spread - Poultry

To reduce the risk of introducing disease into a flock, maintain a biosecurity barrier (physical barrier, personal hygiene, and equipment sanitation) between wildlife, poultry facilities, other commercial avian facilities, and pet birds. Some examples of good biosecurity practices include:

a. Permit only essential workers and vehicles on the premises.
b. Provide clean clothing and a disinfection procedure for employees and visitors. Know your visitor's travel history.
c. Clean and disinfect vehicles at the farm entrance.
d. Avoid visiting other avian facilities.
e. Do not keep pet birds.
f. Protect the flock from exposure to wild birds.
g. Control movement associated with the disposal of bird carcasses, litter, and manure.
h. Quarantine new additions to the flock. Never allow people or material to move from the quarantined birds to the flock.
i. Report signs of disease to your veterinarian.

3.3. Catastrophic Mortality Management

Refer to NRCS standards, or state guidance, regarding appropriate catastrophic animal mortality handling methods.

Plan for Catastrophic Animal Mortality Handling

The following table describes how you plan to manage catastrophic loss of animals in a manner that protects surface and ground water quality. You must follow all national, state and local laws, regulations and guidelines that protect soil, water, air, plants, animals and human health.

Rendering will be used to dispose of catastrophic mortalities. Contact the state veterinarian's office and the local TDEC office.

In the event of catastrophic loss of birds or disposal of spent hens at the end of flock, integrator will pick up and dispose of all catastrophic mortalities. Integrator will dispose of mortalities through their rendering service.

In the event of a disease outbreak immediate contact of the State Vet is required.

Important! In the event of catastrophic animal mortality, contact the following authority before beginning carcass disposal:

Authority name APHIS
Contact name Charlie Hatcher
Phone number 615-781-5310

3.4. Chemical Handling

If checked, the indicated measures will be taken to prevent chemicals and other contaminants from contaminating process waste water or storm water storage and treatment systems.

	This is not a regulatory-agency permitted facility. This section does not apply.

	Measure
X	All chemicals are stored in proper containers. Expired chemicals and empty containers are properly disposed of in accordance with state and federal regulations. Pesticides and associated refuse are disposed of in accordance with the FIFRA label.
X	Chemical storage areas are self-contained with no drains or other pathways that will allow spilled chemicals to exit the storage area.
X	Chemical storage areas are covered to prevent chemical contact with rain or snow.
X	Emergency procedures and equipment are in place to contain and clean up chemical spills.
X	Chemical handling and equipment wash areas are designed and constructed to prevent contamination of surface waters and waste water and storm water storage and treatment systems.
X	All chemicals are custom applied and no chemicals are stored at the operation. Equipment wash areas are designed and constructed to prevent contamination of surface waters and waste water and storm water storage and treatment systems.

Section 4. Land Treatment

This element addresses evaluation and implementation of appropriate conservation practices on sites proposed for land application of manure and organic byproducts from an Animal Feeding Operation. On fields where manure and organic byproducts are applied as beneficial nutrients, it is essential that runoff and soil erosion be minimized, to allow for plant uptake of these nutrients.

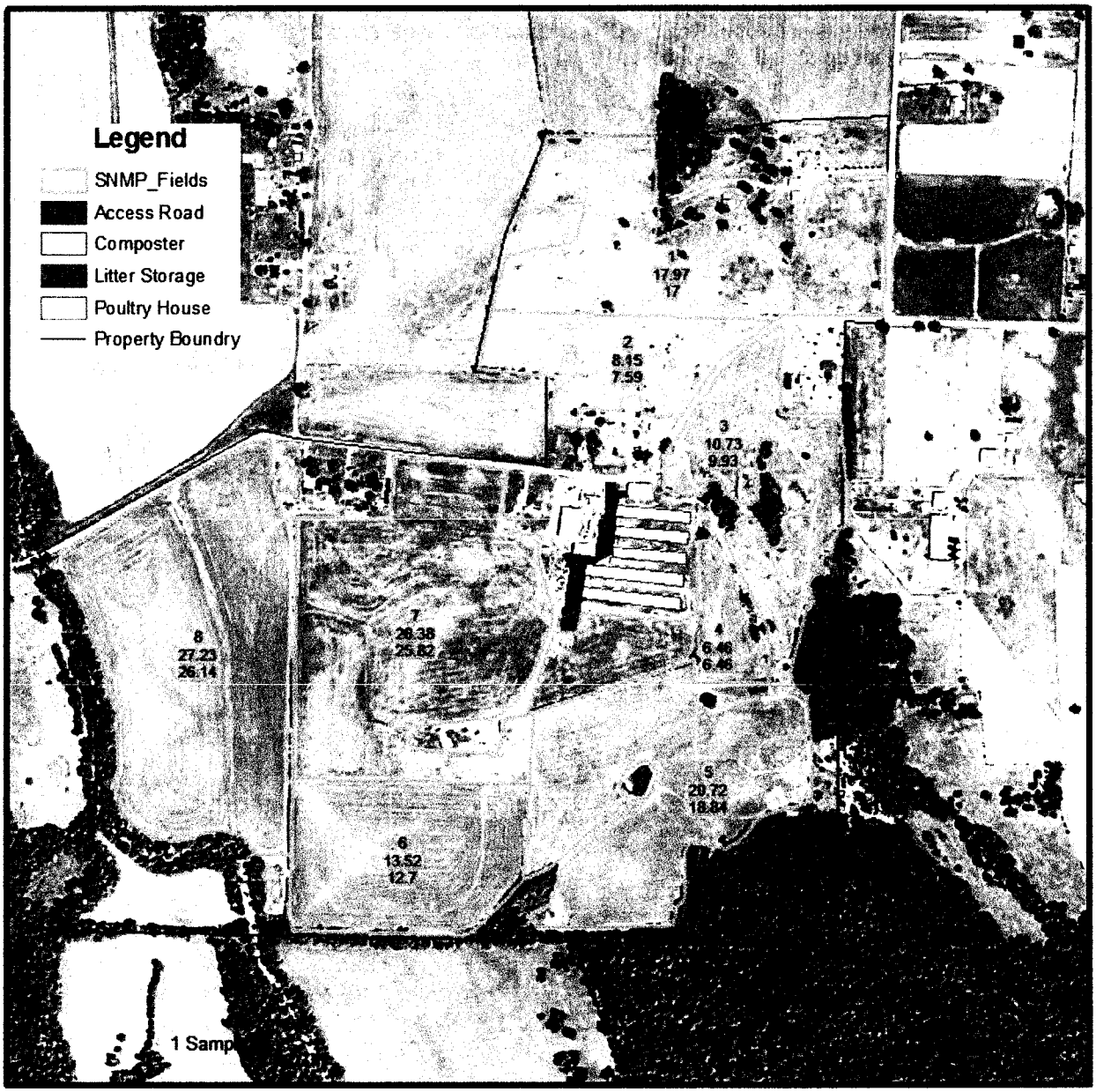
4.1. Map(s) of Fields and Conservation Practices

Fields 6, 7, and 8 are Hayland
Fields 1, 2, 3, 4 and 5 are Pastureland

State: Tennessee
County: Bedford

Richard Bowling CPO

Date: 8/25/09



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4.2. Land Treatment Conservation Practices

Forage Harvest Management (511)
Cutting and removal of forages from the field will be managed to produce the desired quality and quantity, to promote vigorous regrowth, and to maintain stand life. Maintain a minimum of 3-inch stubble height.

Tract/Field	Planned amount (Ac)	Month	Year	Amount Applied	Date
1				17.97	Prior
2				8.15	Prior
3				10.73	Prior
4				6.46	Prior
5				20.72	Prior
6				13.52	Prior
7				26.38	Prior
8				27.23	Prior
Total				**131.16**	

Prescribed Grazing (528)
Apply this practice annually for the purpose of forage production for harvest by grazing livestock while maintaining forage health and vigor for reduced soil erosion, water quality benefits and improved animal performance. Plan grazing duration and animal number of livestock to match forage production. Do not graze closer than minimum heights for the species shown below. Do not graze until well established. This will be, at a minimum, the entire first year's growing season. If grass is not established by the end of the first growing season, defer through the second. Livestock water will be supplied.

Maintain Proper Forage Height

Forage Species	Height to Begin Grazing	Height to Terminate Grazing	Recovery Time Estimate (Days)
Tall Fescue Crabgrass	5-8"	3"	14-45
Tall Fescue (Endophyte Free) Orchardgrass	5-8"	4"	14-45

Nutrient Management (590)
To maintain or improve the chemical and/or biological condition of the soil, manage the amount, form, placement, and timing of plant nutrients. Fertilizer and animal waste application, soil testing, manure analysis, and record keeping will be carried out as specified by the Nutrient Management Section of this Comprehensive Nutrient Management Plan. All nutrients will be applied according to a current soils test. If animal waste is to be applied, a soil test will be required every year. Apply nutrients based on current (no older than 3 years) soil test results.

Tract/Field	Planned amount (Ac)	Month	Year	Amount Applied	Date
1	17.97	04	2010		
2	8.15	04	2010		
3	10.73	04	2010		
4	6.46	04	2010		
5	20.72	04	2010		
6	13.52	04	2010		
7	26.38	04	2010		
8	27.23	04	2010		
Total	**131.16**				

Pest Management (595)
Chemical Control: Read and follow all label directions. Calibrate application equipment prior to application to ensure proper application rates for specific chemicals. Dispose of unused material according to label directions. Mechanical Control: Shred or mow weeds about one inch above the average height of the grass or crop. In areas of heavy competition, remove piled material after mowing to prevent shading or smothering of desirable vegetation. Weeds should be controlled prior to bloom stage.

Tract/Field	Planned amount (Ac)	Month	Year	Amount Applied	Date
1	17.97	04	2010		
2	8.15	04	2010		
3	10.73	04	2010		
4	6.46	04	2010		
5	20.72	04	2010		
6	13.52	04	2010		
7	26.38	04	2010		
8	27.23	04	2010		
Total	**131.16**				

Waste Utilization (633)
The enclosed "Nutrient Management Plan" in Section 4 outlines the proper manure application rates, timing, and methods of application to provide needed crop nutrients and to minimize the transport of nutrients to ground and surface water. Follow setbacks (non-manure) applications areas outlined on maps.

Tract/Field	Planned amount (Ac)	Month	Year	Amount Applied	Date
1	17	04	2010		
2	7.59	04	2010		
3	9.93	04	2010		
4	6.46	04	2010		
5	18.84	04	2010		
6	12.7	04	2010		
7	25.82	04	2010		
8	26.14	04	2010		
Total	**124.48**				

Section 5. Soil and Risk Assessment Analysis

5.1. Soil Information

Field	Soil Survey	Map Unit	Soil Component Name	Surface Texture	Slope Range (%)	OM Range (%)	Bedrock Depth (in.)
1	003	TrC	Talbott	SIL	2-15%	0.5-2%	34
2	003	TrC	Talbott	SIL	2-15%	0.5-2%	34
3	003	TrC	Talbott	SIL	2-15%	0.5-2%	34
4	003	TaB2	Talbott	SIL	2-5%	0.5-2%	34
5	003	Go	Godwin	SIL	0-2%	2-5%	
6	003	Go	Godwin	SIL	0-2%	2-5%	
7	003	TaB2	Talbott	SIL	2-5%	0.5-2%	34
8	003	Go	Godwin	SIL	0-2%	2-5%	

Map Unit Description (Brief, Generated)

Bedford County, Tennessee

[Minor map unit components are excluded from this report]

Map unit: Go - GODWIN SILT LOAM, FREQUENTLY FLOODED

Component: Godwin (92%)

The Godwin component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on basins. The parent material consists of clayey alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Map unit: TaB2 - TALBOTT SILT LOAM, 2 TO 5 PERCENT SLOPES, ERODED

Component: Talbott (100%)

The Talbott component makes up 100 percent of the map unit. Slopes are 2 to 5 percent. This component is on hillslopes on basins. The parent material consists of clayey residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: TrC - TALBOTT-ROCK OUTCROP COMPLEX, 2 TO 15 PERCENT SLOPES

Component: Talbott (60%)

The Talbott component makes up 60 percent of the map unit. Slopes are 2 to 15 percent. This component is on hillslopes on basins. The parent material consists of clayey residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

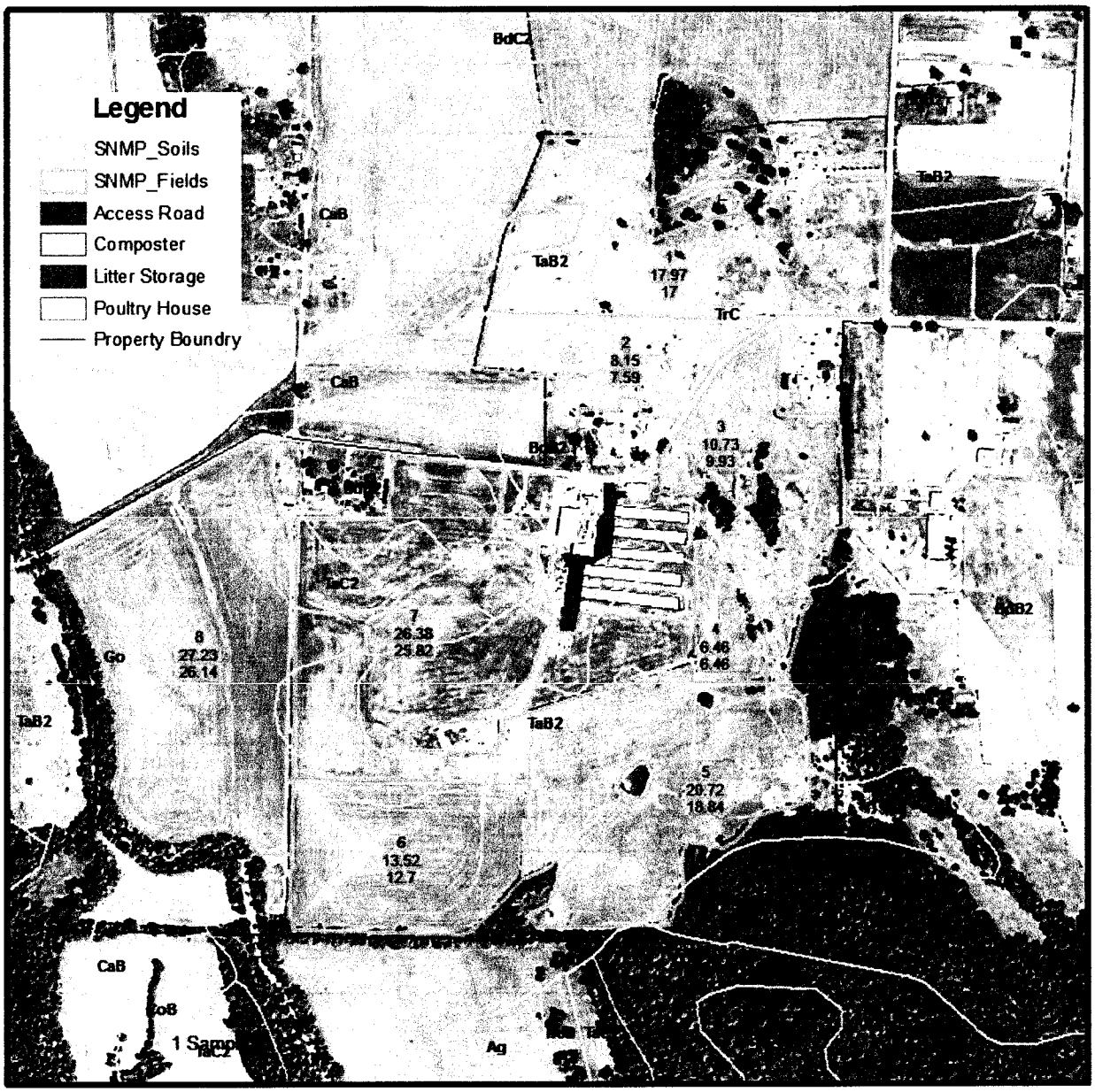
Component: Rock outcrop (25%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop is a miscellaneous area.

State: Tennessee
County: Bedford

Richard Bowling Soils

Date: 8/25/09



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Validus Services LLC

0 345 690 1,380 Feet

5.2. Predicted Soil Erosion

Field	Predominant Soil Type	Slope (%)	Plan Avg. Soil Loss (Ton/Ac/Yr)
1	TrC (Talbott SIL)	7.0	2.1
2	TrC (Talbott SIL)	7.0	2.1
3	TrC (Talbott SIL)	7.0	2.2
4	TaB2 (Talbott SIL)	3.5	1.1
5	Go (Godwin SIL)	1.0	0.3
6	Go (Godwin SIL)	1.0	0.0
7	TaB2 (Talbott SIL)	3.5	0.1
8	Go (Godwin SIL)	1.0	0.0

Field	Crop Year	Starting Date (mm/dd/yyyy)	Ending Date (mm/dd/yyyy)	Soil Loss (Ton/Ac)	Primary Crop
1	2010	11/2/2009	11/1/2010	2.2	Fescue pasture maint
	2011	11/2/2010	11/1/2011	2.1	Fescue pasture maint
	2012	11/2/2011	11/1/2012	2.1	Fescue pasture maint
2	2010	11/2/2009	11/1/2010	2.2	Fescue pasture maint
	2011	11/2/2010	11/1/2011	2.1	Fescue pasture maint
	2012	11/2/2011	11/1/2012	2.1	Fescue pasture maint
3	2010	11/2/2009	11/1/2010	2.3	Fescue pasture maint
	2011	11/2/2010	11/1/2011	2.2	Fescue pasture maint
	2012	11/2/2011	11/1/2012	2.1	Fescue pasture maint
4	2010	11/2/2009	11/1/2010	1.1	Fescue pasture maint
	2011	11/2/2010	11/1/2011	1.1	Fescue pasture maint
	2012	11/2/2011	11/1/2012	1.1	Fescue pasture maint
5	2010	11/2/2009	11/1/2010	0.3	Fescue pasture maint
	2011	11/2/2010	11/1/2011	0.3	Fescue pasture maint
	2012	11/2/2011	11/1/2012	0.3	Fescue pasture maint
6	2010	10/2/2009	10/1/2010	0.1	Fescue hay maint
	2011	10/2/2010	10/1/2011	0.0	Fescue hay maint
	2012	10/2/2011	10/1/2012	0.0	Fescue hay maint
7	2010	10/2/2009	10/1/2010	0.1	Fescue hay maint
	2011	10/2/2010	10/1/2011	0.1	Fescue hay maint
	2012	10/2/2011	10/1/2012	0.1	Fescue hay maint
8	2010	10/2/2009	10/1/2010	0.1	Fescue hay maint
	2011	10/2/2010	10/1/2011	0.0	Fescue hay maint
	2012	10/2/2011	10/1/2012	0.0	Fescue hay maint

5.3. Nitrogen and Phosphorus Risk Analysis

Risk Assessment for Potential Phosphorous Transport from Fields

The Phosphorus Index is a field-specific assessment tool used to provide a relative value of the field for potential phosphorus transport from the fields. Based on the soil test phosphorus level and the P Index value, nutrients should be land applied on a nitrogen-based, with an estimated 2P removal in harvested biomass, or P removal, or no P application. Any phosphorus application option, including a single application (banking), shall not exceed the recommended nitrogen application rate during the year of application, or not exceed the estimated nitrogen removal N harvested biomass.

Tennessee Phosphorus Index

Field	Crop Year	Site and Transport Factor	Mgmt. and Source Factor	P Index w/o P Apps	P Index w/ P Apps	P Loss Risk
1	2010	15	21	60	315	Very High
1	2011	15	21	60	315	Very High
1	2012	15	21	60	315	Very High
2	2010	15	21	60	315	Very High
2	2011	15	21	60	315	Very High
2	2012	15	21	60	315	Very High
3	2010	15	21	60	315	Very High
3	2011	15	21	60	315	Very High
3	2012	15	21	60	315	Very High
4	2010	15	21	60	315	Very High
4	2011	15	21	60	315	Very High
4	2012	15	21	60	315	Very High
5	2010	19	21	76	399	Very High
5	2011	19	21	76	399	Very High
5	2012	19	21	76	399	Very High
6	2010	19	19	38	361	Very High
6	2011	19	19	38	361	Very High
6	2012	19	19	38	361	Very High
7	2010	15	21	60	315	Very High
7	2011	15	21	60	315	Very High
7	2012	15	21	60	315	Very High
8	2010	19	21	76	399	Very High
8	2011	19	21	76	399	Very High
8	2012	19	21	76	399	Very High

5.4. Additional Field Data Required by Risk Assessment Procedure

Field	Distance to Water (Feet)	Slope Length (Feet)	Buffer Width (Feet)	Tillage/Cover Type
1	2,500	150	None	Pasture/Hay
2	2,000	150	None	Pasture/Hay
3	500	150	None	Pasture/Hay
4	500	150	None	Pasture/Hay
5	35	80	None	Pasture/Hay
6	50	80	None	Pasture/Hay
7	800	150	None	Pasture/Hay
8	50	80	None	Pasture/Hay

Section 6. Nutrient Management

The goal of this section is to develop a nutrient budget for nitrogen, phosphorus, and potassium that includes all nutrient sources. From this nutrient budget, projections will be made concerning the sustainability of the plan for the entire crop sequence. In most cases, the nutrient budget is accurate for the first year only. If nutrients from sources not included in this plan are used in the first year, the nutrient budget will be revised to account for those inputs. In subsequent years considered in this plan, a nutrient budget will be developed using current soil analysis data; current manure analysis data; the actual crops to be used and their projected yields and nutrient needs and will account for nutrients from all sources. Guidance in developing a nutrient budget may be obtained from your NRCS Field Office or your University of Tennessee Cooperative Extension Service Agent. Land application procedures must be planned and implemented in a way that minimizes potential adverse impacts to the environment and public health.

If land is included in the future for application that is not under the ownership/control of the producer, appropriate agreements will be obtained.

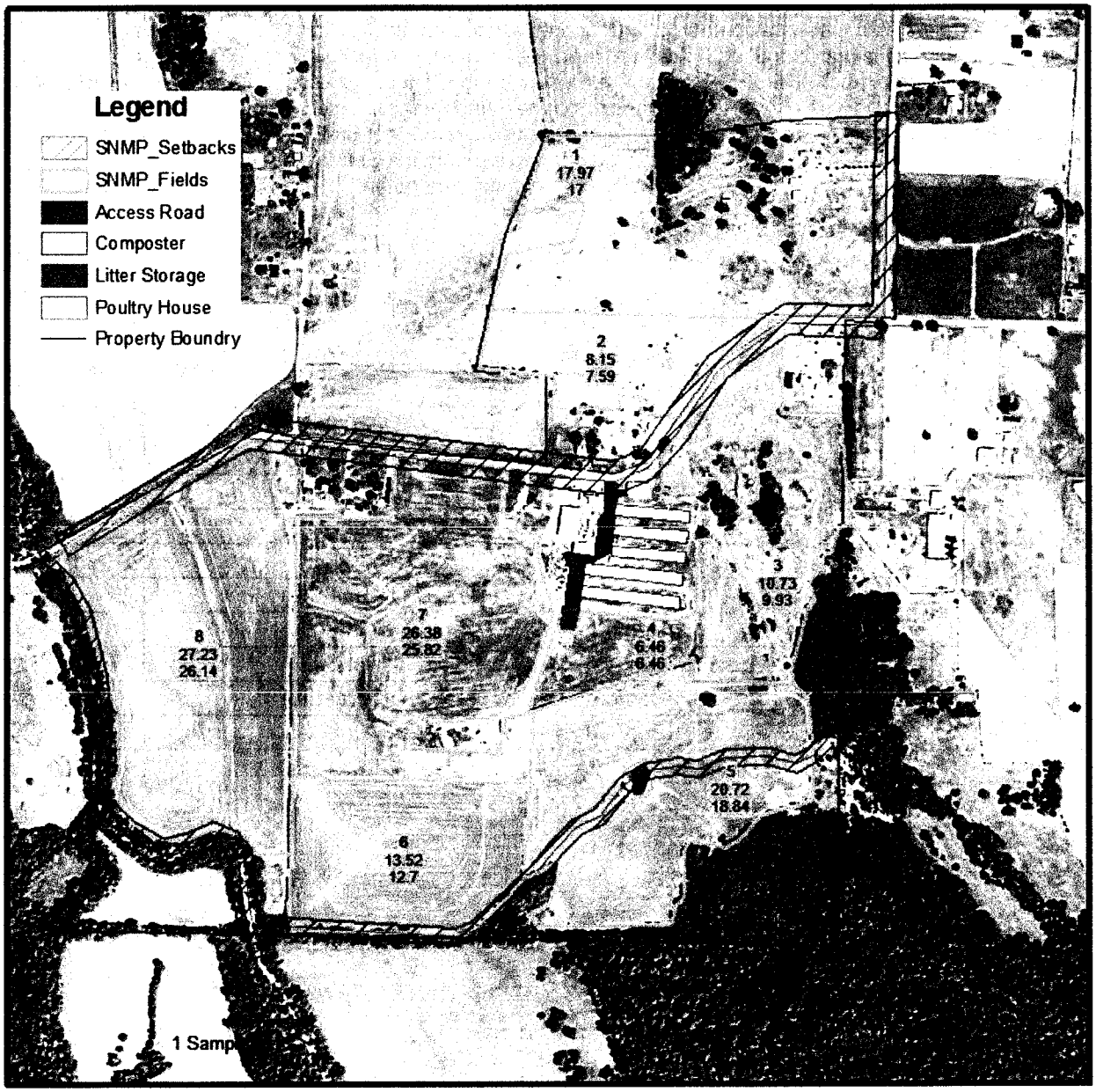
6.1. Field Information

Field ID	Sub-field ID	Total Acres	Spreadable Acres	County	Predominant Soil Type	Slope (%)
1		18.0	17.0	Bedford	TrC (Talbott SIL)	7.0
2		8.1	7.6	Bedford	TrC (Talbott SIL)	7.0
3		10.7	9.9	Bedford	TrC (Talbott SIL)	7.0
4		6.5	6.5	Bedford	TaB2 (Talbott SIL)	
5		20.7	18.8	Bedford	Go (Godwin SIL)	
6		13.5	12.7	Bedford	Go (Godwin SIL)	
7		26.4	25.8	Bedford	TaB2 (Talbott SIL)	
8		27.2	26.1	Bedford	Go (Godwin SIL)	

State: Tennessee
County: Bedford

Richard Bowling Land Application

Date: 8/25/09



N
W E
S

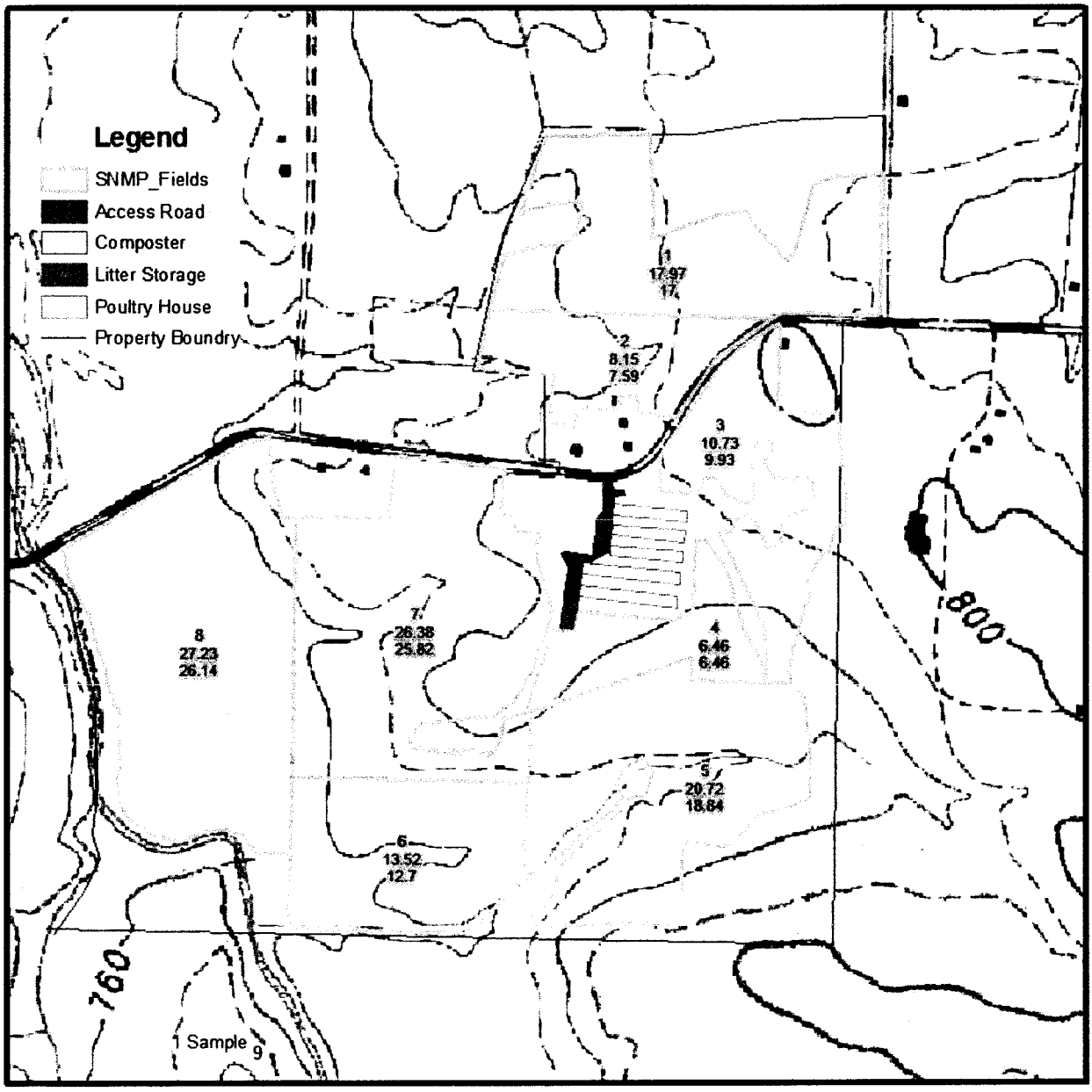
Validus Services LLC

0 340 680 1 360 Feet

State: Tennessee
County: Bedford

Richard Bowling Topo

Date: 8/25/09



Validus Services LLC

0 340 680 1,360 Feet

6.2. Manure Application Setback Distances

Setback Requirements: NRCS Standard

Feature	Setback Criteria	Setback Distance (Feet)
Well	Application upgradient of feature	300
Well	Application down-gradient of feature	150
Waterbody	Predominant slope <5% with good vegetation	30
Waterbody	Predominant slope >8%	100
Waterbody	Poor vegetation	100
Public road	All applications	50
Dwelling (other than producer)	All applications	300
Public use area	All applications	300
Property line	Application upgradient of feature	30

Source: Nutrient Management Standard 590
(http://efotg.nrcs.usda.gov/references/public/TN/Nutrient_Management_(590)_Standard.doc)

6.3. Soil Test Data

Field	Test Year	OM (%)	P Test Used	P	K	Mg	Ca	Units	Soil pH	Buffer pH	CEC (meq/ 100g)
1	2009	3.8	Mehlich-1	93	365	435	4,016	lbs/a	6.2	7.6	15.8
2	2009	2.8	Mehlich-1	76	366	390	3,020	lbs/a	5.9	7.6	13.2
3	2009	4.9	Mehlich-1	166	520	570	7,406	lbs/a	7.3	7.7	21.6
4	2009	2.9	Mehlich-1	110	278	380	3,146	lbs/a	6.3	7.6	12.9
5	2009	2.2	Mehlich-1	82	215	310	4,124	lbs/a	6.8	7.6	13.2
6	2009	2.0	Mehlich-1	50	162	334	4,950	lbs/a	6.8	7.6	16.8
7	2009	2.6	Mehlich-1	83	223	425	5,119	lbs/a	6.4	7.7	18.9
8	2009	2.0	Mehlich-1	110	164	379	5,647	lbs/a	7.7	7.7	18.2

6.4. Manure Nutrient Analysis

Manure Source	Dry Matter (%)	Total N	NH_4-N	Total P_2O_5	Total K_2O	Avail. P_2O_5	Avail. K_2O	Units	Analysis Source and Date
House 1		78.8	0.7	54.7	36.7	54.7	36.7	Lb/Ton	A&J Analytical Laboratories INC.
House 2		78.8	0.7	54.7	36.7	54.7	36.7	Lb/Ton	A&J Analytical Laboratories INC.
House 3		78.8	0.7	54.7	36.7	54.7	36.7	Lb/Ton	A&J Analytical Laboratories INC.
House 4		78.8	0.7	54.7	36.7	54.7	36.7	Lb/Ton	A&J Analytical Laboratories INC.
House 5		78.8	0.7	54.7	36.7	54.7	36.7	Lb/Ton	A&J Analytical Laboratories INC.
Dry Stack		78.8	0.7	54.7	36.7	54.7	36.7	Lb/Ton	A&J Analytical Laboratories INC.

(1) Entered analysis may be the average of several individual analyses.
(2) Tennessee assumes that 100% of manure phosphorus and 100% of manure potassium is crop available. First-year per-acre nitrogen availability for individual manure applications is given in the Planned Nutrient Applications table. For more information about nitrogen availability in Tennessee, see "Manure Application Management," Tables 3 and 4, Tennessee Extension, PB1510, 2/94 (http://wastemgmt.ag.utk.edu/ExtensionProjects/extension_publications.htm).

6.5. Planned Crops and Fertilizer Recommendations

Field	Crop Year	Planned Crop	Yield Goal (per Acre)	N Rec (Lbs/A)	P_2O_5 Rec (Lbs/A)	K_2O Rec (Lbs/A)	N Removed (Lbs/A)	P_2O_5 Removed (Lbs/A)	K_2O Removed (Lbs/A)
1	2010	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
1	2011	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
1	2012	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
2	2010	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
2	2011	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
2	2012	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
3	2010	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
3	2011	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
3	2012	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
4	2010	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
4	2011	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
4	2012	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
5	2010	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
5	2011	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
5	2012	Fescue pasture maint	4.0 Ton	120	0	0	152	72	208
6	2010	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
6	2011	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
6	2012	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
7	2010	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
7	2011	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
7	2012	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
8	2010	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
8	2011	Fescue hay maint	4.0 Ton	105	0	0	152	72	208
8	2012	Fescue hay maint	4.0 Ton	105	0	0	152	72	208

* Unharvested cover crop or first crop in double-crop system.
[a] Custom fertilizer recommendation.

6.6. Manure Application Planning Calendar – January 2010 through December 2010

Field	Total Acres	Spread. Acres	Predominant Soil Type	Primary 2010 Crop (Prev. Primary Crop)	Jan '10	Feb '10	Mar '10	Apr '10	May '10	Jun '10	Jul '10	Aug '10	Sep '10	Oct '10	Nov '10	Dec '10
1	18.0	17.0	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
2	8.1	7.6	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
3	10.7	9.9	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
4	6.5	6.5	Talbott SIL (TaB2 2-5%)	Fescue pasture maint (Fescue pasture maint)												
5	20.7	18.8	Godwin SIL (Go 0-2%)	Fescue pasture maint (Fescue pasture maint)												
6	13.5	12.7	Godwin SIL (Go 0-2%)	Fescue hay maint (Fescue hay maint)												
7	26.4	25.8	Talbott SIL (TaB2 2-5%)	Fescue hay maint (Fescue hay maint)												
8	27.2	26.1	Godwin SIL (Go 0-2%)	Fescue hay maint (Fescue hay maint)												
Total	*131.2*	*124.5*						*20.0*								

No. indicates total loads
"X" indicates other manure apps

Manure Application Planning Calendar – January 2011 through December 2011

Field	Total Acres	Spread. Acres	Predominant Soil Type	Primary 2011 Crop (Prev. Primary Crop)	Jan '11	Feb '11	Mar '11	Apr '11	May '11	Jun '11	Jul '11	Aug '11	Sep '11	Oct '11	Nov '11	Dec '11
1	18.0	17.0	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
2	8.1	7.6	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
3	10.7	9.9	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
4	6.5	6.5	Talbott SIL (TaB2 2-5%)	Fescue pasture maint (Fescue pasture maint)												
5	20.7	18.8	Godwin SIL (Go 0-2%)	Fescue pasture maint (Fescue pasture maint)												
6	13.5	12.7	Godwin SIL (Go 0-2%)	Fescue hay maint (Fescue hay maint)												
7	26.4	25.8	Talbott SIL (TaB2 2-5%)	Fescue hay maint (Fescue hay maint)												
8	27.2	26.1	Godwin SIL (Go 0-2%)	Fescue hay maint (Fescue hay maint)												
Total	*131.2*	*124.5*						*20.2*								

No. indicates total loads
"X" indicates other manure apps

Manure Application Planning Calendar – January 2012 through December 2012

Field	Total Acres	Spread. Acres	Predominant Soil Type	Primary 2012 Crop (Prev. Primary Crop)	Jan '12	Feb '12	Mar '12	Apr '12	May '12	Jun '12	Jul '12	Aug '12	Sep '12	Oct '12	Nov '12	Dec '12
1	18.0	17.0	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
2	8.1	7.6	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
3	10.7	9.9	Talbott SIL (TrC 2-15%)	Fescue pasture maint (Fescue pasture maint)												
4	6.5	6.5	Talbott SIL (TaB2 2-5%)	Fescue pasture maint (Fescue pasture maint)												
5	20.7	18.8	Godwin SIL (Go 0-2%)	Fescue pasture maint (Fescue pasture maint)												
6	13.5	12.7	Godwin SIL (Go 0-2%)	Fescue hay maint (Fescue hay maint)												
7	26.4	25.8	Talbott SIL (TaB2 2-5%)	Fescue hay maint (Fescue hay maint)												
8	27.2	26.1	Godwin SIL (Go 0-2%)	Fescue hay maint (Fescue hay maint)												
Total	*131.2*	*124.5*						*20.2*								

No. indicates total loads
"X" indicates other manure apps

6.7. Planned Nutrient Applications (Manure-spreadable Area)

Field	App. Month	Target Crop	Nutrient Source	Application Method	Rate Basis	Rate/Acre	Loads, Speed or Time	Total Amount Applied	Acres Cov.	Avail N (Lbs/A)	Avail P_2O_5 (Lbs/A)	Avail K_2O (Lbs/A)
1	Apr 2010	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	2.8 Lds	22.4 Ton	17.2	51	71	48
1	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	147 Lbs		2,499 Lbs	17.0	68	0	0
1	Apr 2011	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	2.8 Lds	22.4 Ton	17.2	51	71	48
1	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	119 Lbs		2,023 Lbs	17.0	55	0	0
1	Apr 2012	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	2.8 Lds	22.4 Ton	17.2	51	71	48
1	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	108 Lbs		1,836 Lbs	17.0	50	0	0
2	Apr 2010	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1.2 Lds	9.6 Ton	8.0	47	66	44
2	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	152 Lbs		1,154 Lbs	7.6	70	0	0
2	Apr 2011	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1.2 Lds	9.6 Ton	8.0	47	66	44
2	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	123 Lbs		934 Lbs	7.6	57	0	0
2	Apr 2012	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1.2 Lds	9.6 Ton	8.0	47	66	44
2	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	113 Lbs		858 Lbs	7.6	52	0	0
3	Apr 2010	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1.5 Lds	12 Ton	10.0	47	66	44
3	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	158 Lbs		1,569 Lbs	9.9	73	0	0
3	Apr 2011	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1.5 Lds	12 Ton	10.0	47	66	44
3	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	132 Lbs		1,311 Lbs	9.9	61	0	0
3	Apr 2012	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1.5 Lds	12 Ton	10.0	47	66	44
3	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	121 Lbs		1,202 Lbs	9.9	56	0	0
4	Apr 2010	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1 Lds	8 Ton	6.7	47	66	44
4	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	154 Lbs		995 Lbs	6.5	71	0	0
4	Apr 2011	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1 Lds	8 Ton	6.7	47	66	44
4	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	128 Lbs		827 Lbs	6.5	59	0	0
4	Apr 2012	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1 Lds	8 Ton	6.7	47	66	44
4	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	117 Lbs		756 Lbs	6.5	54	0	0
5	Apr 2010	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	3.1 Lds	24.8 Ton	19.1	51	71	48
5	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	147 Lbs		2,769 Lbs	18.8	68	0	0
5	Apr 2011	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	3.1 Lds	24.8 Ton	19.1	51	71	48
5	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	119 Lbs		2,242 Lbs	18.8	55	0	0
5	Apr 2012	Fescue pasture maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	3.1 Lds	24.8 Ton	19.1	51	71	48

Field	App. Month	Target Crop	Nutrient Source	Application Method	Rate Basis	Rate/Acre	Loads, Speed or Time	Total Amount Applied	Acres Cov.	Avail N (Lbs/A)	Avail P_2O_5 (Lbs/A)	Avail K_2O (Lbs/A)
5	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	Supp. N	108 Lbs		2,035 Lbs	18.8	50	0	0
6	Apr 2010	Fescue hay maint	House 1	Truck, Not incorporated	1-yr P	1.2 Ton	1.9 Lds	15.2 Ton	12.7	47	66	44
6	May 2010	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	126 Lbs		1,600 Lbs	12.7	58	0	0
6	Apr 2011	Fescue hay maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	1.5 Lds	12 Ton	9.2	51	71	48
6	Apr 2011	Fescue hay maint	House 2	Truck, Not incorporated	1-yr P	1.3 Ton	0.6 Lds	4.8 Ton	3.7	51	71	48
6	May 2011	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	89 Lbs		1,130 Lbs	12.7	41	0	0
6	Apr 2012	Fescue hay maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	2.1 Lds	16.8 Ton	12.9	51	71	48
6	May 2012	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	76 Lbs		965 Lbs	12.7	35	0	0
7	Apr 2010	Fescue hay maint	House 2	Truck, Not incorporated	1-yr P	1.3 Ton	4.2 Lds	33.6 Ton	25.8	51	71	48
7	May 2010	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	117 Lbs		3,021 Lbs	25.8	54	0	0
7	Apr 2011	Fescue hay maint	House 2	Truck, Not incorporated	1-yr P	1.3 Ton	4.2 Lds	33.6 Ton	25.8	51	71	48
7	May 2011	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	89 Lbs		2,298 Lbs	25.8	41	0	0
7	Apr 2012	Fescue hay maint	House 1	Truck, Not incorporated	1-yr P	1.3 Ton	0.5 Lds	4 Ton	3.1	51	71	48
7	Apr 2012	Fescue hay maint	House 2	Truck, Not incorporated	1-yr P	1.3 Ton	3.7 Lds	29.6 Ton	22.8	51	71	48
7	May 2012	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	78 Lbs		2,014 Lbs	25.8	36	0	0
8	Apr 2010	Fescue hay maint	House 2	Truck, Not incorporated	1-yr P	1.3 Ton	4.3 Lds	34.4 Ton	26.5	51	71	48
8	May 2010	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	115 Lbs		3,006 Lbs	26.1	53	0	0
8	Apr 2011	Fescue hay maint	House 2	Truck, Not incorporated	1-yr P	1.3 Ton	4.3 Lds	34.4 Ton	26.5	51	71	48
8	May 2011	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	86 Lbs		2,248 Lbs	26.1	40	0	0
8	Apr 2012	Fescue hay maint	House 2	Truck, Not incorporated	1-yr P	1.3 Ton	4.3 Lds	34.4 Ton	26.5	51	71	48
8	May 2012	Fescue hay maint	46-0-0	Surface broadcast	Supp. N	76 Lbs		1,987 Lbs	26.1	35	0	0

Planned Nutrient Applications (Non-manure-spreadable Area)

Field	App. Month	Target Crop	Nutrient Source	Application Method	Rate Basis	Rate/Acre	Total Amount Applied	Acres Cov.	Avail N (Lbs/A)	Avail P_2O_5 (Lbs/A)	Avail K_2O (Lbs/A)
1	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	147 Lbs	143 Lbs	1.0	68	0	0
1	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	119 Lbs	115 Lbs	1.0	55	0	0
1	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	108 Lbs	105 Lbs	1.0	50	0	0
2	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	152 Lbs	85 Lbs	0.6	70	0	0
2	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	123 Lbs	69 Lbs	0.6	57	0	0
2	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	113 Lbs	63 Lbs	0.6	52	0	0
3	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	158 Lbs	126 Lbs	0.8	73	0	0
3	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	132 Lbs	106 Lbs	0.8	61	0	0
3	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	121 Lbs	97 Lbs	0.8	56	0	0
5	May 2010	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	147 Lbs	276 Lbs	1.9	68	0	0
5	May 2011	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	119 Lbs	224 Lbs	1.9	55	0	0
5	May 2012	Fescue pasture maint	46-0-0	Surface broadcast	1-yr N	108 Lbs	203 Lbs	1.9	50	0	0
6	May 2010	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	126 Lbs	103 Lbs	0.8	58	0	0
6	May 2011	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	89 Lbs	73 Lbs	0.8	41	0	0
6	May 2012	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	76 Lbs	62 Lbs	0.8	35	0	0
7	May 2010	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	117 Lbs	66 Lbs	0.6	54	0	0
7	May 2011	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	89 Lbs	50 Lbs	0.6	41	0	0
7	May 2012	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	78 Lbs	44 Lbs	0.6	36	0	0
8	May 2010	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	115 Lbs	125 Lbs	1.1	53	0	0
8	May 2011	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	86 Lbs	94 Lbs	1.1	40	0	0
8	May 2012	Fescue hay maint	46-0-0	Surface broadcast	1-yr N	76 Lbs	83 Lbs	1.1	35	0	0

6.8. Field Nutrient Balance (Manure-spreadable Area)

Year	Field	Size	Crop	Yield Goal	Fertilizer Recs[1]			Nutrients Applied[2]			Balance After Recs[3]			Balance After Removal[4]	
		Acres		/Acre	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	P_2O_5 Lb/A	K_2O Lb/A
2010	1	17.0	Fescue pasture maint	4	120	0	0	120	72	49	0	72	49	0	-159
2011	1	17.0	Fescue pasture maint	4	120	0	0	107	72	49	0†	144	98	0	-159
2012	1	17.0	Fescue pasture maint	4	120	0	0	102	72	49	0†	216	147	0	-159
Total	**1**				**360**	**0**	**0**	**329**	**216**	**147**					
2010	2	7.6	Fescue pasture maint	4	120	0	0	120	70	46	0	70	46	-2	-162
2011	2	7.6	Fescue pasture maint	4	120	0	0	107	70	46	0†	140	92	-2	-162
2012	2	7.6	Fescue pasture maint	4	120	0	0	102	70	46	0†	210	138	-2	-162
Total	**2**				**360**	**0**	**0**	**329**	**210**	**138**					
2010	3	9.9	Fescue pasture maint	4	120	0	0	120	66	44	0	66	44	-6	-164
2011	3	9.9	Fescue pasture maint	4	120	0	0	108	66	44	0†	132	88	-6	-164
2012	3	9.9	Fescue pasture maint	4	120	0	0	103	66	44	0†	198	132	-6	-164
Total	**3**				**360**	**0**	**0**	**331**	**198**	**132**					
2010	4	6.5	Fescue pasture maint	4	120	0	0	120	68	46	0	68	46	-4	-162
2011	4	6.5	Fescue pasture maint	4	120	0	0	108	68	46	0†	136	92	-4	-162
2012	4	6.5	Fescue pasture maint	4	120	0	0	103	68	46	0†	204	138	-4	-162
Total	**4**				**360**	**0**	**0**	**331**	**204**	**138**					
2010	5	18.8	Fescue pasture maint	4	120	0	0	120	72	49	0	72	49	0	-159
2011	5	18.8	Fescue pasture maint	4	120	0	0	107	72	49	0†	144	98	0	-159
2012	5	18.8	Fescue pasture maint	4	120	0	0	102	72	49	0†	216	147	0	-159
Total	**5**				**360**	**0**	**0**	**329**	**216**	**147**					
2010	6	12.7	Fescue hay maint	4	105	0	0	105	66	44	0	66	44	-6	-164
2011	6	12.7	Fescue hay maint	4	105	0	0	93	72	49	0†	138	93	0	-159
2012	6	12.7	Fescue hay maint	4	105	0	0	87	72	49	0†	210	142	0	-159
Total	**6**				**315**	**0**	**0**	**285**	**210**	**142**					
2010	7	25.8	Fescue hay maint	4	105	0	0	105	71	48	0	71	48	-1	-160
2011	7	25.8	Fescue hay maint	4	105	0	0	92	71	48	0†	142	96	-1	-160
2012	7	25.8	Fescue hay maint	4	105	0	0	87	71	48	0†	213	144	-1	-160
Total	**7**				**315**	**0**	**0**	**284**	**213**	**144**					

Year	Field	Size	Crop	Yield Goal	Fertilizer Recs[1]			Nutrients Applied[2]			Balance After Recs[3]			Balance After Removal[4]	
		Acres		/Acre	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	P_2O_5 Lb/A	K_2O Lb/A
2010	8	26.1	Fescue hay maint	4	105	0	0	105	72	49	0	72	49	0	-159
2011	8	26.1	Fescue hay maint	4	105	0	0	92	72	49	0†	144	98	0	-159
2012	8	26.1	Fescue hay maint	4	105	0	0	87	72	49	0†	216	147	0	-159
Total	**8**				**315**	**0**	**0**	**284**	**216**	**147**					

Field Nutrient Balance (Non-manure-spreadable Area)

Year	Field	Size	Crop	Yield Goal	Fertilizer Recs[1]			Nutrients Applied[2]			Balance After Recs[3]			Balance After Removal[4]	
		Acres		/Acre	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	P_2O_5 Lb/A	K_2O Lb/A
2010	1	1.0	Fescue pasture maint	4	120	0	0	68	0	0	-52	0	0	-72	-208
2011	1	1.0	Fescue pasture maint	4	120	0	0	55	0	0	-65	0	0	-72	-208
2012	1	1.0	Fescue pasture maint	4	120	0	0	50	0	0	-70	0	0	-72	-208
Total	**1**				**360**	**0**	**0**	**173**	**0**	**0**					
2010	2	0.6	Fescue pasture maint	4	120	0	0	70	0	0	-50	0	0	-72	-208
2011	2	0.6	Fescue pasture maint	4	120	0	0	57	0	0	-63	0	0	-72	-208
2012	2	0.6	Fescue pasture maint	4	120	0	0	52	0	0	-68	0	0	-72	-208
Total	**2**				**360**	**0**	**0**	**179**	**0**	**0**					
2010	3	0.8	Fescue pasture maint	4	120	0	0	73	0	0	-47	0	0	-72	-208
2011	3	0.8	Fescue pasture maint	4	120	0	0	61	0	0	-59	0	0	-72	-208
2012	3	0.8	Fescue pasture maint	4	120	0	0	56	0	0	-64	0	0	-72	-208
Total	**3**				**360**	**0**	**0**	**190**	**0**	**0**					
2010	5	1.9	Fescue pasture maint	4	120	0	0	68	0	0	-52	0	0	-72	-208
2011	5	1.9	Fescue pasture maint	4	120	0	0	55	0	0	-65	0	0	-72	-208
2012	5	1.9	Fescue pasture maint	4	120	0	0	50	0	0	-70	0	0	-72	-208
Total	**5**				**360**	**0**	**0**	**173**	**0**	**0**					
2010	6	0.8	Fescue hay maint	4	105	0	0	58	0	0	-47	0	0	-72	-208
2011	6	0.8	Fescue hay maint	4	105	0	0	41	0	0	-64	0	0	-72	-208
2012	6	0.8	Fescue hay maint	4	105	0	0	35	0	0	-70	0	0	-72	-208
Total	**6**				**315**	**0**	**0**	**134**	**0**	**0**					

Year	Field	Size	Crop	Yield Goal	Fertilizer Recs[1]			Nutrients Applied[2]			Balance After Recs[3]			Balance After Removal[4]	
		Acres		/Acre	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	N Lb/A	P_2O_5 Lb/A	K_2O Lb/A	P_2O_5 Lb/A	K_2O Lb/A
2010	7	0.6	Fescue hay maint	4	105	0	0	54	0	0	-51	0	0	-72	-208
2011	7	0.6	Fescue hay maint	4	105	0	0	41	0	0	-64	0	0	-72	-208
2012	7	0.6	Fescue hay maint	4	105	0	0	36	0	0	-69	0	0	-72	-208
Total	**7**				**315**	**0**	**0**	**131**	**0**	**0**					
2010	8	1.1	Fescue hay maint	4	105	0	0	53	0	0	-52	0	0	-72	-208
2011	8	1.1	Fescue hay maint	4	105	0	0	40	0	0	-65	0	0	-72	-208
2012	8	1.1	Fescue hay maint	4	105	0	0	35	0	0	-70	0	0	-72	-208
Total	**8**				**315**	**0**	**0**	**128**	**0**	**0**					

[1] Fertilizer Recs are the crop fertilizer recommendations. The N rec accounts for any N credit from previous legume crop.

[2] Nutrients Applied are the nutrients expected to be available to the crop from that year's manure applications plus nutrients from that year's commercial fertilizer applications and nitrates from irrigation water. With a double-crop year, the total nutrients applied for both crops and the year's balances are listed on the second crop's line.

[3] For N, Nutrients Applied minus Fertilizer Recs for indicated crop year. Also includes amount of residual N expected to become available that year from prior years' manure applications. For P_2O_5 and K_2O, Nutrients Applied minus Fertilizer Recs *through* the indicated crop year, with positive balances carried forward to subsequent years. Negative values indicate a potential need to apply additional nutrients.

[4] Nutrients Applied minus amount removed by harvested portion of crop through the indicated year. Positive balances are carried forward to subsequent years.

¤ Indicates a custom fertilizer recommendation in the Fertilizer Recs column.

[a] Indicates in the Balance After Recs N column that the legume crop is assumed to utilize some or all of the supplied N.

† Indicates in the Balance After Recs N column that the value includes residual N expected to become available that year from prior years' manure applications.

6.9. Manure Inventory Annual Summary

Manure Source	Plan Period	On Hand at Start of Period	Total Generated	Total Imported	Total Trans-ferred In	Total Applied	Total Exported	Total Trans-ferred Out	On Hand at End of Period	Units
House 1	Jan '10 - Dec '10	60	105	0	0	92	0	10	63	Ton
House 2	Jan '10 - Dec '10	60	105	0	0	68	0	34	63	Ton
House 3	Jan '10 - Dec '10	60	105	0	0	0	0	102	63	Ton
House 4	Jan '10 - Dec '10	85	147	0	0	0	0	142	90	Ton
House 5	Jan '10 - Dec '10	85	147	0	0	0	0	142	90	Ton
Dry Stack	Jan '10 - Dec '10	38	0	0	428	0	430	0	36	Ton
All Sources	**Jan '10 - Dec '10**	**388**	**609**	**0**	**428**	**160**	**430**	**430**	**405**	**Ton**
House 1	Jan '11 - Dec '11	63	105	0	0	89	0	10	69	Ton
House 2	Jan '11 - Dec '11	63	105	0	0	73	0	26	69	Ton
House 3	Jan '11 - Dec '11	63	105	0	0	0	0	99	69	Ton
House 4	Jan '11 - Dec '11	90	147	0	0	0	0	132	105	Ton
House 5	Jan '11 - Dec '11	90	147	0	0	0	0	132	105	Ton
Dry Stack	Jan '11 - Dec '11	36	0	0	399	0	399	0	36	Ton
All Sources	**Jan '11 - Dec '11**	**405**	**609**	**0**	**399**	**162**	**399**	**399**	**453**	**Ton**
House 1	Jan '12 - Dec '12	69	105	0	0	98	0	10	67	Ton
House 2	Jan '12 - Dec '12	69	105	0	0	64	0	44	66	Ton
House 3	Jan '12 - Dec '12	69	105	0	0	0	0	108	66	Ton
House 4	Jan '12 - Dec '12	105	147	0	0	0	0	144	108	Ton
House 5	Jan '12 - Dec '12	105	147	0	0	0	0	144	108	Ton
Dry Stack	Jan '12 - Dec '12	36	0	0	450	0	450	0	36	Ton
All Sources	**Jan '12 - Dec '12**	**453**	**609**	**0**	**450**	**162**	**450**	**450**	**451**	**Ton**

6.10. Fertilizer Material Annual Summary

Product Analysis	Plan Period	Product Needed Jan - Aug	Product Needed Sep - Dec	Total Product Needed	Units
46-0-0	Jan '10 - Dec '10	17,538	0	17,538	Lbs
46-0-0	Jan '11 - Dec '11	13,742	0	13,742	Lbs
46-0-0	Jan '12 - Dec '12	12,309	0	12,309	Lbs

6.11. Whole-farm Nutrient Balance (Manure-spreadable Area)

	N (Lbs)	P_2O_5 (Lbs)	K_2O (Lbs)
Total Manure Nutrients on Hand at Start of Plan[1]	30,574	21,224	14,240
Total Manure Nutrients Collected[2]	143,968	99,937	67,051
Total Manure Nutrients Imported[3]	0	0	0
Total Manure Nutrients Exported[4]	100,785	69,961	46,939
Total Manure Nutrients on Hand at End of Plan[5]	35,523	24,659	16,544
Total Manure Nutrients Applied[6]	37,999	26,439	17,821
Available Manure Nutrients Applied[7]	22,803	26,439	17,821
Commercial Fertilizer Nutrients Applied[8]	19,064	0	0
Available Nutrients Applied[9]	41,867	26,439	17,821
Nutrient Utilization Potential[10]	41,903	26,888	77,676
Nutrient Balance of Spreadable Acres[11*]	-36	-449	-59,855
Average Nutrient Balance per Spreadable Acre per Year[12*]	0	-1	-160

1. Values indicate total manure nutrients present in storage(s) at the beginning of the plan.
2. Values indicate total manure nutrients collected on the farm.
3. Values indicate total manure nutrients imported onto the farm.
4. Values indicate total manure nutrients exported from the farm to an external operation.
5. Values indicate total manure nutrients present in storage(s) at the end of plan.
6. Values indicate total nutrients present in land-applied manure. Losses due to rate, timing and method of application are not included in these values.
7. Values indicate available manure nutrients applied on the farm based on rate, time and method of application. These values are based on the total manure nutrients applied (row 6) after accounting for state-specific nutrient losses due to rate, time and method of application.
8. Values indicate nutrients applied as commercial fertilizers and nitrates contained in irrigation water.
9. Values are the sum of available manure nutrients applied (row 7) and commercial fertilizer nutrients applied (row 8).
10. Values indicate nutrient utilization potential of crops grown. For N the value generally is based on crop N recommendation for non-legume crops and crop N uptake or other state-imposed limit for N application rates for legumes. P_2O_5 and K_2O values generally are based on fertilizer recommendations or crop removal (whichever is greatest).
11. Values indicate available nutrients applied (row 9) minus crop nutrient utilization potential (row 10). Negative values indicate additional nutrient utilization potential and positive values indicate over-application.
12. Values indicate average per acre nutrient balance. Values are calculated by dividing nutrient balance of spreadable acres (row 11) by the number of spreadable acres in plan and by the length of the plan in years. Negative values indicate additional average per acre nutrient utilization potential and positive values indicate average per acre over-application.

* Non-trivial, positive values for N indicate that the plan was not properly developed. Negative values for N indicate additional nutrient utilization potential which may or may not be intentional. For example, plans that include legume crops often will not utilize the full N utilization potential for legume crops if manure can be applied to non-legume crops that require N for optimum yield. Positive values for P_2O_5 and/or K_2O do not necessarily indicate that the plan was not developed properly. For example, producers may be allowed to apply N-based application rates of manure to fields with low soil test P values or fields with a low potential P-loss risk based on the risk assessment tool used by the state. Negative values for P_2O_5 and K_2O indicate that planned applications to some fields are less than crop removal rates.

Whole-farm Nutrient Balance (Non-manure-spreadable Area)

	N (Lbs)	P_2O_5 (Lbs)	K_2O (Lbs)
Commercial Fertilizer Nutrients Applied[1]	1,068	0	0
Nutrient Utilization Potential[2]	2,294	0	0
Nutrient Balance of Non-spreadable Acres[3*]	-1,226	0	0
Average Nutrient Balance per Non-spreadable Acre per Year[4*]	-61	0	0

1. Values indicate nutrients applied as commercial fertilizers and nitrates contained in irrigation water.
2. Values indicate nutrient utilization potential of crops grown based on crop fertilizer recommendations.
3. Values indicate commercial fertilizer nutrients applied (row 1) minus crop nutrient utilization potential (row 2). Negative values indicate additional nutrient utilization potential and positive values indicate over-application.
4. Values indicate average per acre nutrient balance. Values are calculated by dividing nutrient balance of non-spreadable acres (row 3) by number of non-spreadable acres in plan. Negative values indicate additional average per acre nutrient utilization potential and positive values indicate average per acre over-application.

* Non-trivial, positive values for N indicate that the plan was not properly developed. Negative values for N indicate additional nutrient utilization potential which may or may not be intentional. Positive values for P_2O_5 and/or K_2O do not necessarily indicate that the plan was not developed properly. For example, multiple year applications may have been planned during the final plan year(s) and these nutrients will not be utilized by crops in the current plan. Negative values for P_2O_5 and K_2O indicate that applications to some fields may have been delayed to allow the producer to apply the nutrients in accordance with their fertilization schedule.

Section 7. Record Keeping

This section includes a list of key records that the operator should keep in order to document and verify implementation of the procedures in this CNMP. Records should be kept for a minimum of 5 years, or for the length of the contract, rotation or permit, whichever is longer, for each field where manure is applied.

These general records include but are not limited to:

- Soil test results
- Weather and soil conditions 24 hours prior to, during, and 24 hours after application of manure, chemicals and pesticides
- Documentation (can be verbal) of arrangements for land injection on land not owned by the grower
- Type, quantities, and sources of all nutrients generated and collected
- Type, quantities, and sources of all nutrients applied to each field
- Dates of manure applications
- Analysis of manure prior to application and test method used
- Analysis of the manure transferred, where applicable
- Dates manure was transferred, where applicable and to whom
- Amount of manure transferred, where applicable
- Inspection reports
- Preside Dress Soil Nitrate Testing (PSNT), where applicable
- Operation and Maintenance records of conservation practices and equipment
- Restricted pesticides used to meet label requirements
- Equipment Calibration records
- Crops planted, tillage methods, and dates planted
- Crop harvest dates and yields
- Conservation practices and management activities and implemented
- Adjustments to the nutrient management plan based on records and changes in farming operations as appropriate.
- Changes to the CNMP
- Weekly check of volume left in pit
- Annual visual inspection of retention structure (the pits), animal holding areas, if applicable and land application areas.
- Records of mortalities and how managed

Manure Export Agreement

Agreement for Removal of Litter, Manure and/or Process Wastewater from an AFO
(Base on Appendix A of: *TDEC Division of Water Pollution Control, Chapter 1200-4-5 Permit Effluent Limitations and Standards, July 2004*). *These agreements should be event driven with a copy for each event.*

The conditions listed below help to protect water quality. These conditions apply to litter, manure and/or process wastewater removed from an AFO. The material covered by this agreement was removed on

_____from the facility owned by _____, located at _____.

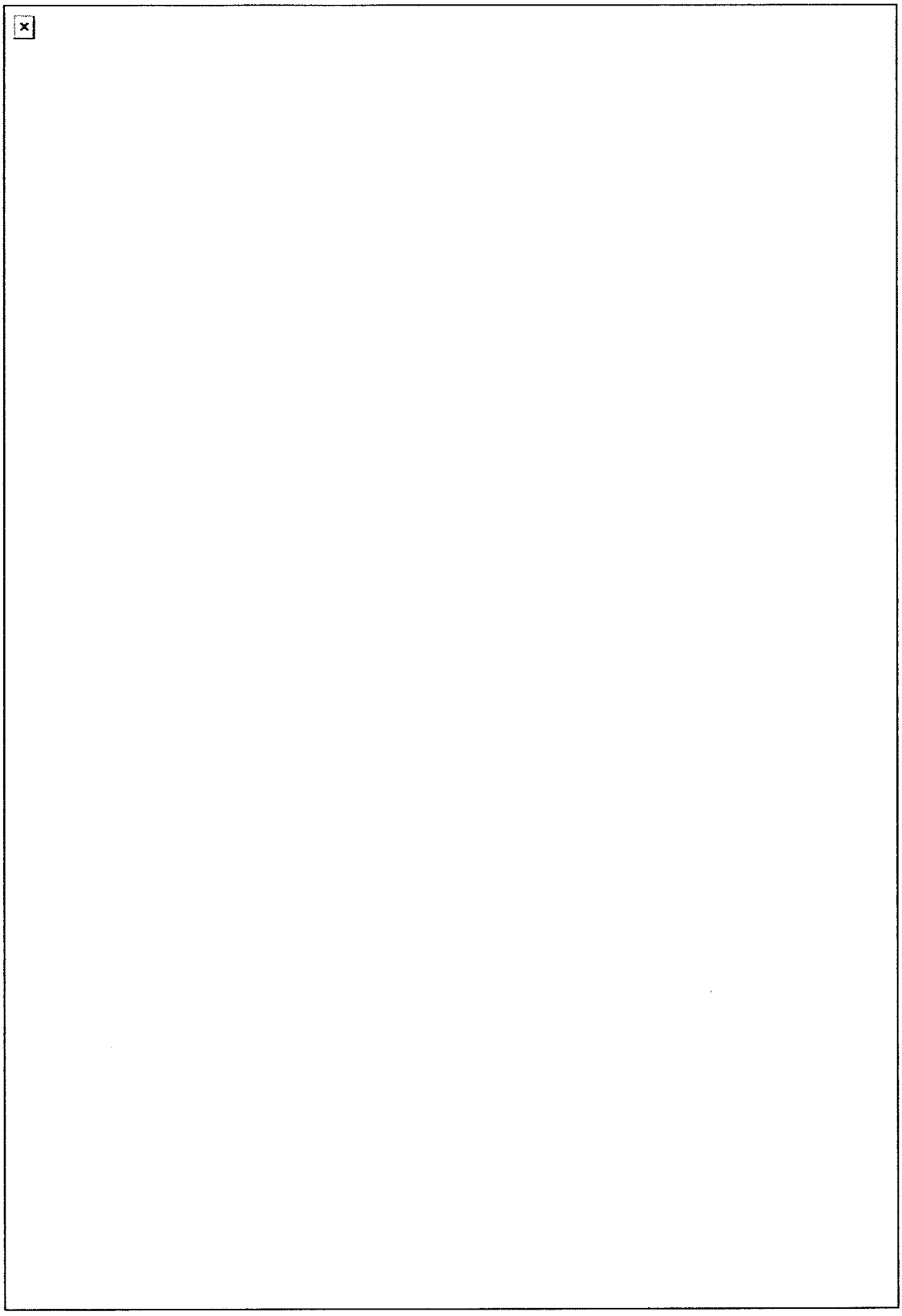
A. The litter, manure and/or process wastewater must be managed to ensure there is no discharge of litter, manure and/or process wastewater to surface or ground water.
B. When removed from the facility, litter, manure and/or process wastewater should be applied directly to the field or stockpiled and covered with plastic or stored in a building.
C. Litter, manure and/or process wastewater must not be stockpiled near streams, sinkholes or wells.
D. Fields receiving litter, manure and/or process wastewater should be soil tested at least every two or three years.
E. A litter, manure and/or process wastewater nutrient analysis should be used to determine application rates for various crops.
F. Calibrate spreading equipment and apply litter, manure and/or process wastewater uniformly.
G. Apply no more nitrogen than can be used by the crop.
H. A buffer zone is recommended between the application sites and adjacent streams, lakes, ponds, sinkholes and wells.
I. Do not apply litter, manure and/or process wastewater when the ground is frozen, or on steep slopes subject to flooding, erosion or rapid runoff.
J. Cover vehicles hauling litter, manure and/or process wastewater on public roads.
K. Keep records of locations where litter, manure and/or process wastewater will be used as a fertilizer.

I, _____ am the person receiving litter, manure and/or process wastewater and I understand the conditions listed above.
(Name)

_____ _____
(Signature) (Date)

_____ _____
(Address) (Phone)

Section 8. Manure and Soil Test Results



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SOIL ANALYSIS

Client
Mr. John Donaldson
107 Donaldson Ave
Celina TN 38551

Grower
RICHARD BOWLING

Report No: 09-187-0763
Cust No: 01560
Date Printed: 07/08/2009
Date Received: 07/06/2009
PO:
Page: 1 of 15

Lab Number : 25137 **Field Id :** **Sample Id :** F1S1

Test	Results	SOIL TEST RATINGS (Low / Medium / Optimum)
Soil pH	6.4	
Buffer pH	7.63	
Phosphorus (P)	128 LB/ACRE	
Potassium (K)	228 LB/ACRE	
Calcium (Ca)	4610 LB/ACRE	
Magnesium (Mg)	432 LB/ACRE	
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	4.4 % ENR 132	
Nitrate Nitrogen		

Calculated Cation Exchange Capacity
16.6 meq/100g

Calculated Cation Saturation

%K	1.8
%Ca	69.4
%Mg	10.8
%H	17.8

K : Mg Ratio
0.16 ☐

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop : **Rec Units:**

Comments

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Date Printed 07/08/2009
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Lab Number : 25138 **Field Id :** **Sample Id :** F1S2

Test	Results
Soil pH	6.1
Buffer pH	7.49
Phosphorus (P)	58 LB/ACRE
Potassium (K)	502 LB/ACRE
Calcium (Ca)	3422 LB/ACRE
Magnesium (Mg)	438 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	3.3 % ENR 110
Nitrate Nitrogen	

SOIL TEST RATINGS

Low Medium Optimum

Calculated Cation Exchange Capacity
15.1
meq/100g

Calculated Cation Saturation

%K	4.3
%Ca	56.7
%Mg	12.1
%H	27.0

K : Mg Ratio
0.35

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop : **Rec Units:**

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PO:
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Lab Number : 25139 **Field Id :** **Sample Id :** F2S1

Test	Results	SOIL TEST RATINGS (Low / Medium / Optimum)
Soil pH	5.9	
Buffer pH	7.55	
Phosphorus (P)	76 LB/ACRE	
Potassium (K)	366 LB/ACRE	
Calcium (Ca)	3020 LB/ACRE	
Magnesium (Mg)	390 LB/ACRE	
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	2.8 % ENR 100	
Nitrate Nitrogen		

Calculated Cation Exchange Capacity
13.2 meq/100g

Calculated Cation Saturation

%K	3.6
%Ca	57.2
%Mg	12.3
%H	27.3

K : Mg Ratio
0.29

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop : **Rec Units:**

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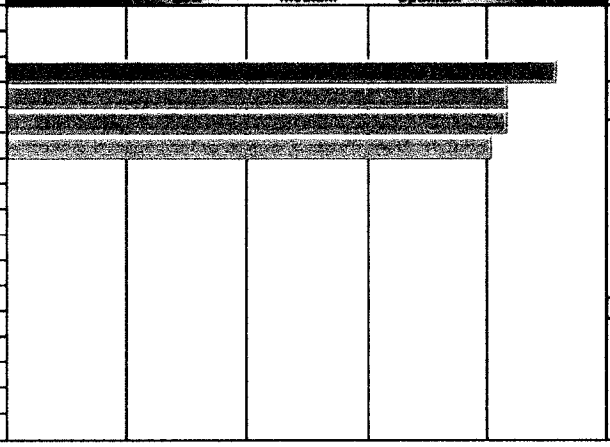
Lab Number : 25140 **Field Id :** **Sample Id :** F3S1

Test	Results
Soil pH	7.3
Buffer pH	7.73
Phosphorus (P)	166 LB/ACRE
Potassium (K)	520 LB/ACRE
Calcium (Ca)	7406 LB/ACRE
Magnesium (Mg)	570 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	4.9 % ENR 142
Nitrate Nitrogen	

SOIL TEST RATINGS

Low Medium Optimum



Calculated Cation Exchange Capacity
21.6
meq/100g

Calculated Cation Saturation

%K	3.1
%Ca	85.7
%Mg	11.0
%H	0.0

K : Mg Ratio
0.28 ☐

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
Crop ;							**Rec Units:**			

Comments

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Date Received : 07/06/2009
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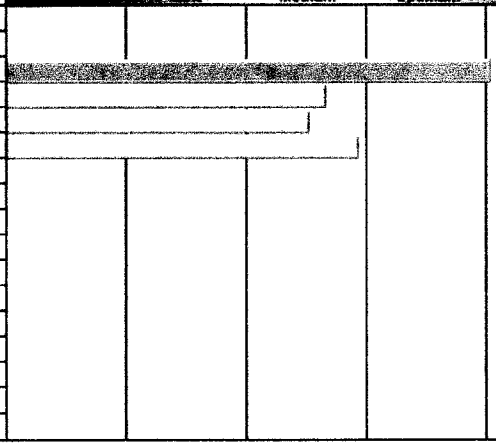
Lab Number : 25141 **Field Id :** **Sample Id :** F4S1

Test	Results
Soil pH	6.3
Buffer pH	7 61
Phosphorus (P)	110 LB/ACRE
Potassium (K)	278 LB/ACRE
Calcium (Ca)	3146 LB/ACRE
Magnesium (Mg)	380 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	2.9 % ENR 102
Nitrate Nitrogen	

SOIL TEST RATINGS

Low Medium Optimum



Calculated Cation Exchange Capacity
12.9
meq/100g

Calculated Cation Saturation

%K	2.8
%Ca	61.0
%Mg	12.3
%H	24.2

K : Mg Ratio
0.23 ☐

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
Crop :							**Rec Units:**			

Comments

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Date Printed: 07/08/2009
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Lab Number: 25142 **Field Id:** **Sample Id:** F5S1

Test	Results
Soil pH	6.5
Buffer pH	7.65
Phosphorus (P)	140 LB/ACRE
Potassium (K)	292 LB/ACRE
Calcium (Ca)	3106 LB/ACRE
Magnesium (Mg)	338 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	2.0 % ENR 84
Nitrate Nitrogen	

SOIL TEST RATINGS: Low | Medium | Optimum

Calculated Cation Exchange Capacity: 12.3 meq/100g

Calculated Cation Saturation

%K	3.0
%Ca	63.1
%Mg	11.4
%H	22.8

K : Mg Ratio: 0.27

SOIL FERTILITY GUIDELINES

Crop : Rec Units:

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop : Rec Units:

Comments

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Date Printed: 07/08/2009
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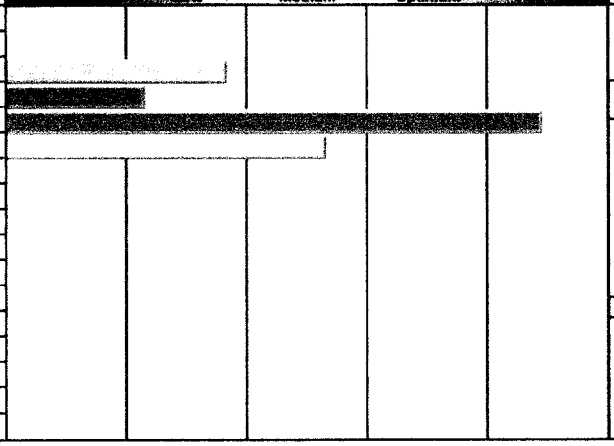
Lab Number: 25143 **Field Id:** **Sample Id:** F5S2

Test	Results
Soil pH	7.2
Buffer pH	7.69
Phosphorus (P)	24 LB/ACRE
Potassium (K)	138 LB/ACRE
Calcium (Ca)	5150 LB/ACRE
Magnesium (Mg)	282 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	2.3 % ENR 90
Nitrate Nitrogen	

SOIL TEST RATINGS



Calculated Cation Exchange Capacity
14.2
meq/100g

Calculated Cation Saturation

%K	1.2
%Ca	90.7
%Mg	8.3
%H	0.0

K : Mg Ratio
0.15 ☐

SOIL FERTILITY GUIDELINES

Crop : Rec Units:

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop : Rec Units:

Comments

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PO:
Page: 8 of 15

Lab Number: 25145 **Field Id:** **Sample Id:** F6S1

Test	Results
Soil pH	6.8
Buffer pH	7.65
Phosphorus (P)	50 LB/ACRE
Potassium (K)	162 LB/ACRE
Calcium (Ca)	4950 LB/ACRE
Magnesium (Mg)	334 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	2.0 % ENR 84
Nitrate Nitrogen	

SOIL TEST RATINGS

Low Medium Optimum

Calculated Cation Exchange Capacity: **16.8** meq/100g

Calculated Cation Saturation

%K	1.2
%Ca	73.7
%Mg	8.3
%H	16.7

K : Mg Ratio: 0.15

SOIL FERTILITY GUIDELINES

Crop: **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop: **Rec Units:**

Comments

Patent Pending 1999

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SOIL ANALYSIS

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Report No: 09-187-0763
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Date Printed: 07/08/2009
Date Received: 07/06/2009
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Page: 9 of 15

Lab Number : 25146 **Field Id :** **Sample Id :** F7S1

Test	Results
Soil pH	6.4
Buffer pH	7.63
Phosphorus (P)	122 LB/ACRE
Potassium (K)	258 LB/ACRE
Calcium (Ca)	3528 LB/ACRE
Magnesium (Mg)	436 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	2.0 % ENR 84
Nitrate Nitrogen	

SOIL TEST RATINGS

Low Medium Optimum

Calculated Cation Exchange Capacity: **13.9** meq/100g

Calculated Cation Saturation

%K	2.4
%Ca	63.5
%Mg	13.1
%H	21.3

K : Mg Ratio: 0.18

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop : **Rec Units:**

Comments

Patent Pending 1999

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Report No. 09-187-0763
Cust No: 01560
Date Printed: 07/08/2009
Date Received: 07/06/2009
PO:
Page: 10 of 15

Lab Number: 25147 **Field Id:** **Sample Id:** F7S2

Test	Results	SOIL TEST RATINGS (Low / Medium / Optimum)
Soil pH	6.0	
Buffer pH	7.59	
Phosphorus (P)	80 LB/ACRE	
Potassium (K)	204 LB/ACRE	
Calcium (Ca)	3496 LB/ACRE	
Magnesium (Mg)	380 LB/ACRE	
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	2.7 % ENR 98	
Nitrate Nitrogen		

Calculated Cation Exchange Capacity
13.9 meq/100g

Calculated Cation Saturation

%K	1.9
%Ca	62.9
%Mg	11.4
%H	23.6

K : Mg Ratio
0.17 ☐

SOIL FERTILITY GUIDELINES

Crop: **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
Crop:							**Rec Units:**			

Comments

Patent Pending 1999

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SOIL ANALYSIS

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Report No. 09-187-0763
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Date Printed 07/08/2009
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Lab Number : 25148 **Field Id :** **Sample Id :** F7S3

Test	Results
Soil pH	6.8
Buffer pH	7.64
Phosphorus (P)	46 LB/ACRE
Potassium (K)	206 LB/ACRE
Calcium (Ca)	8332 LB/ACRE
Magnesium (Mg)	460 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	3.0 % ENR 104
Nitrate Nitrogen	

SOIL TEST RATINGS
Low Medium Optimum

Calculated Cation Exchange Capacity
25.9
meq/100g

Calculated Cation Saturation

%K	1.0
%Ca	80.4
%Mg	7.4
%H	11.1

K : Mg Ratio
0.14

SOIL FERTILITY GUIDELINES

Crop : Rec Units:

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
Crop :							Rec Units:			

Comments

Patent Pending 1999

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A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

Client
Mr. John Donaldson
107 Donaldson Ave
Celina TN 38551

Grower
RICHARD BOWLING

Report No. 09-187-0763
Cust No 01560
Date Printed 07/08/2009
Date Received 07/06/2009
PO
Page 12 of 15

Lab Number : 25149 **Field Id :** **Sample Id :** F8S1

Test	Results	SOIL TEST RATINGS (Low / Medium / Optimum)
Soil pH	6.8	
Buffer pH	7.73	
Phosphorus (P)	196 LB/ACRE	
Potassium (K)	152 LB/ACRE	
Calcium (Ca)	4978 LB/ACRE	
Magnesium (Mg)	420 LB/ACRE	
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	2.0 % ENR 84	
Nitrate Nitrogen		

Calculated Cation Exchange Capacity
16.5 meq/100g

Calculated Cation Saturation

%K	1.2
%Ca	75.4
%Mg	10.6
%H	13.1

K : Mg Ratio
0.11

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
Crop :							**Rec Units:**			

Comments

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Grower
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Cust No: 01560
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Page : 13 of 15

Lab Number : 25150 **Field Id :** **Sample Id :** F8S2

Test	Results
Soil pH	6.8
Buffer pH	7.72
Phosphorus (P)	106 LB/ACRE
Potassium (K)	164 LB/ACRE
Calcium (Ca)	6542 LB/ACRE
Magnesium (Mg)	378 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	2.0 % ENR 84
Nitrate Nitrogen	

SOIL TEST RATINGS

Low Medium Optimum

Calculated Cation Exchange Capacity

20.4
meq/100g

Calculated Cation Saturation

%K	1.0
%Ca	80.2
%Mg	7.7
%H	11.0

K : Mg Ratio

0.13

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe

Crop : **Rec Units:**

Comments

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SOIL ANALYSIS

Client :
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Celina TN 38551

Grower
RICHARD BOWLING

Report No. 09-187-0763
Cust No: 01560
Date Printed: 07/08/2009
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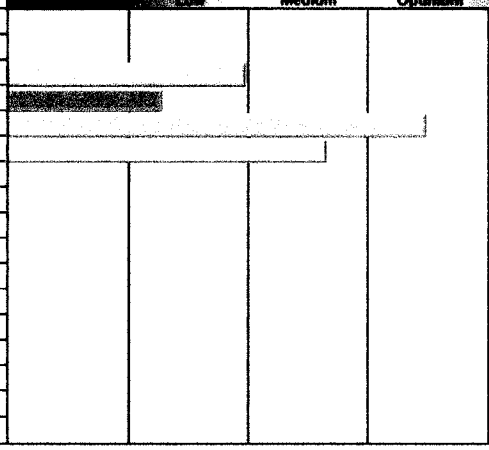
PO:
Page : 14 of 15

Lab Number : 25151 **Field Id :** **Sample Id :** F8S3

Test	Results
Soil pH	6.5
Buffer pH	7.68
Phosphorus (P)	28 LB/ACRE
Potassium (K)	176 LB/ACRE
Calcium (Ca)	5422 LB/ACRE
Magnesium (Mg)	340 LB/ACRE
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	1.7 % ENR 78
Nitrate Nitrogen	

SOIL TEST RATINGS



Calculated Cation Exchange Capacity
17.8
meq/100g

Calculated Cation Saturation

%K	1.3
%Ca	76.2
%Mg	8.0
%H	14.4

K : Mg Ratio
0.16 ☐

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
Crop :							**Rec Units:**			

Comments

Patent Pending 1999

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SOIL ANALYSIS

Client
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Grower
RICHARD BOWLING

Report No. 09-187-0763
Cust No: 01560
Date Printed: 07/08/2009
Date Received: 07/06/2009
PO:
Page: 15 of 15

Lab Number : 25153 **Field Id :** **Sample Id :** F9S1

Test	Results	SOIL TEST RATINGS (Low / Medium / Optimum)
Soil pH	6.1	
Buffer pH	7.59	
Phosphorus (P)	156 LB/ACRE	
Potassium (K)	158 LB/ACRE	
Calcium (Ca)	4642 LB/ACRE	
Magnesium (Mg)	398 LB/ACRE	
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	2.0 % ENR 84	
Nitrate Nitrogen		

Calculated Cation Exchange Capacity
16.7 meq/100g

Calculated Cation Saturation

%K	1.2
%Ca	69.5
%Mg	9.9
%H	19.6

K : Mg Ratio
0.12

SOIL FERTILITY GUIDELINES

Crop : **Rec Units:**

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
Crop :							**Rec Units:**			

Comments

Patent Pending 1999

Section 9. Closure Plan

Use if permitted dry system.

R. B. Broiler Houses

In the event that Richard Bowling ~~egg production~~ at this location ceases, the following will be done within 360 days:

- Any litter currently in storage at the time of closure will be removed and spread on the farm or spread elsewhere according to my Nutrient Management Plan.
- All litter in houses will be removed and spread on the farm or spread elsewhere according to my Nutrient Management Plan.
- All land application of litter will be done at application rates calculated in the Nutrient Management Plan.
- The most current litter analysis will be provided to anyone removing litter from the farm.
- Any dead birds in the houses at the time of closure will be incinerated.

Section 10. References

10.1. Publications

Animal Waste

AWMFH Chapter 4, Table 4-11(d), March 2008

Crop Fertilizer Recommendations

"Lime and Fertilizer Recommendations for the Various Crops of Tennessee," BEES Info #100, Aug 2008
http://soilplantandpest.utk.edu/publications/soilfertilizerpubs.htm

Manure Nutrient Availability

"Manure Application Management," Tables 3 and 4, Tennessee Extension, PB1510, 2/94
http://wastemgmt.ag.utk.edu/ExtensionProjects/extension_publications.htm

Phosphorus Assessment

"Tennessee Phosphorus Index," Tennessee NRCS, Nov. 2001

Practice Standards

Tennessee NRCS Nutrient Management Standard (590), Jan. 2003
http://efotg.nrcs.usda.gov/references/public/TN/Nutrient_Management_(590)_Standard.doc

10.2. Software and Data Sources

MMP Version	MMP 0.2.8.0
MMP Plan File	8/28/2009 11:59:57 PM
MMP Initialization File for Tennessee	6/4/2009
MMP Soils File for Tennessee	6/2/2009
Phosphorus Index Tool Version	2009.02.20
NRCS Conservation Plan(s)	

10.3. Operation and Maintenance

General
Operation and maintenance of structural, non-structural, and land treatment measures requires effort and expenditures throughout the life of the practice(s) to maintain safe conditions and assure proper functioning. Operation includes the administration, management, and performance of non-maintenance actions needed to keep a completed practice safe and functioning as planned. Maintenance includes work to prevent deterioration of practices, repairing damage, or replacement of the practice(s) if one or more components fail. Listed below is the operation and maintenance plan for the structural, non-structural, and land treatment measures for this operation.

Concrete in the buildings should be checked for signs of cracking. If cracks are discovered they must be repaired immediately. Hairline cracks are expected and should pose no problem.

Waste Storage Facility –Roofed Storage Facilities
Trusses/roof supports shall be examined during/after snowfall and high wind events. Excessive snow loads may require removal. Damage from high winds may cause structural damage to the truss/roof supports. Roof materials shall be replaced as wear/leakage occurs. Metal roofing may require periodic painting. Gutters and Downspouts shall be maintained.

Heavy Use Area Protection
This practice is applied every year to protect area(s) from soil erosion by maintaining vegetative cover around houses, barns, roads, etc. These areas will have pests controlled as needed and will be fertilized at maintenance levels for optimum growth.

Limit access to the area during poor soil / weather situations to protect the cover.
Inspect the heavy use area after significant storms and repair damaged areas as soon as practical.

Fence
Fences and gates will be inspected often and repaired promptly. Electric twine can be used if it becomes necessary to subdivide the herd lots and to prevent the development of denuded areas.

Pasture Management
The pastures shall be managed for optimal growth of vegetation. The pastures are divided into sub-pastures as needed. The pastures will be managed in such a manner that will result in a well maintained stand of grass. Grazing of pastures should follow the recommendations provided by NRCS.

The actual time that cows are on pastures shall be adjusted based on production of forage and amount of nutrients applied. It is suggested that a ledger be kept to record the number of cows and time kept on individual pasture areas.

The pastures must be managed to prevent denuded areas from developing. This will be accomplished using gates and fencing to confine cows to specific areas. Portable feeders, portable shades, electric fence and portable water troughs are ways to help distribute the cows, and ultimately, evenly spreading the nutrients over the pastures. Electric twine can be used to subdivide the pastures and restrict grazing to the desired areas. This will help prevent the formation of denuded areas. A daily use record should be maintained in order to ensure

- Use field scouting to determine when treatment threshold has been reached. Treatment thresholds for specific pests and crops are often available from the local Cooperative Extension Service office.
- Alternate pesticides of dissimilar mode of action or chemistry to reduce-target species resistance.
- Select methods of application that will result in the least potential for runoff and leaching.

Waste Utilization
Follow Nutrient Management Plan included in this document for the proper manure application rates, timing, and methods of application to provide nutrients to support crop production and to minimize the transport of nutrients to ground and surface water.

Commercial Fertilizer Application Equipment Calibration
The nitrogen applicator and the commercial broadcast spreaders will be set per the manufacturer's recommendations, then filled with a known amount and checked over a known acreage. Adjustments will be made to achieve the planned rates.

Animal Mortality Management
Inspect the facility to note any maintenance needs or indicators of operation problems.

Composting
The composted material will be utilized per the enclosed "Nutrient Management Plan".

Manure Spreader Calibration
There are several methods that can be used to calibrate the application rate of a manure spreader. It is desirable to repeat the calibration procedure 2 to 3 times and average the results to ensure a more accurate calibration. Calibration should take place annually or when manure is being applied from different sources or consistency. Before calibrating a manure spreader, the spreader settings should be adjusted so that the spread is uniform. Most spreaders tend to deposit more manure near the spreader than at the edge of the spread pattern. Overlapping can make the overall application more uniform. Calibrating of application rates when overlapping, requires measuring the width of two spreads and dividing by two to get the effective spread width.

To calibrate the manure spreader use either of the following procedures.

Spreader Calibration - Method 1

Equipment: plastic sheet 6 x 6ft or 10 x 10ft, scale, bucket

1. Weigh sheet with bucket on the scale

2. Lay sheet in field in the path of manure spreader positioning it so the tractor will be at spreading speed before it reaches the sheet.

3. After spreading weigh sheet and manure in the bucket. Subtract weight of sheet plus bucket

4. Tons manure/acre = lb manure x 2 1.8, sheet size, sq ft

Spreader Calibration - Method 2

Equipment: yard stick, rope

1. Determine manure spreader capacity

2. Tie rope around tractor tire to determine distance traveled in one revolution

3. Spread manure load, counting wheel revolutions to determine the distance traveled

4. Measure width spreader is covering with manure, multiply by distance traveled

uniform distribution of the nutrients. If a denuded area starts to develop, immediate corrective measures must be taken. Corrective actions may include, but not be limited to, temporarily fencing off the area, reseeding the area, and relocating the cause of the denuded area if applicable. Any buildup of manure (i.e., around gates and feeders) should be removed, analyzed for N, P and K then spread according to the nutrient management plan. Supplemental fertilizer may be needed to maintain good vegetation conditions in the pastures. A soil test will determine which nutrients are lacking and the amount to apply. Only apply the amount of nutrients recommended by the soil test and in accordance with the nutrient management plan.

Animal Trails and Walkways
The walkways should be cleaned frequently to prevent a buildup of manure and reshaped as necessary to facilitate the removal of surface runoff. Fences and gates shall be used to control the access and movement of cattle using the animal trails and walkways and to prevent the creation of ruts in the trails and walkways. Cows will be moved non-stop between the barn and the pastures and not allowed to loaf or rest on the walkway.

The solids removed from any trails or walkways shall be analyzed for N, P_2O_5, and K_2O as they are removed and before they are spread.

Manure Spreader
Collecting a sample from the manure spreader is one of the preferred methods of collecting a solid manure sample because it represents what is being applied to the field. In addition, by the time manures have been scraped, collected, and loaded into a manure spreader, reasonable mixing has been performed. However, you should still collect at least 5 sub-samples following the collection procedures for the solids separator.

Nutrient Management
When applying waste or commercial fertilizer, calibrate application equipment to ensure that applied rates at recommended rates. It is important to avoid unnecessary exposure to chemical fertilizers and organic wastes. Protective clothing, respirator, gloves and footwear shall be worn when appropriate. When cleaning equipment after nutrient application, residual fertilizers or wastes shall be removed and saved in an appropriate manner.

- Keep records to document implementation activities. (Refer to PQC for guidance for the kind of records that should be kept).
- Calibrate manure application equipment according to procedures outlined in this section.
- Dispose/recycle nutrient containers according to state and local guidelines or regulations.
- Apply nutrients according to the procedures outlined in Section 6.
- Delay application of manure if precipitation capable of producing runoff is anticipated within 24 hours of the application event.
- Monitor soil test phosphorus levels and adjust nutrient application rates accordingly.
- Do not apply manure and wastewater on saturated, frozen and/or frequently flooded soils.
- Adhere to no-application setbacks as outlined on the conservation plan maps in Section 4.

Pesticide Management
The owner/operator is responsible for the proper application and storage of pesticides including calibration and maintenance of all equipment used in application of pesticides. No pesticides are stored on-site. Chemical fertilizers are purchased on an as needed basis. In addition, moveable mixing station is used and long time use of a specific mixing site is avoided therefore minimizing ground contamination. The following should be addressed, according to pesticide labels, in order to minimize negative impacts to the environment:

- Be trained and licensed to apply restricted pesticides.
- Dispose of leftover materials and containers according to label requirements.
- Read and follow all label directions and Material Safety Data Sheets that come with the pesticides.
- Avoid mixing pesticides and loading or rinsing sprayers next to wells, streams, sinkholes, drainage ditches, etc. Install anti-siphon devices on all hoses used to fill spray tanks.
- Avoid exposure to pesticides. Wear appropriate clothing, gloves, respirator, and footwear as specified on the product label. Wash affected area as soon as possible after possible exposure and prior to dinning or smoking.
- Check product label for reentry time. Follow restricted entry intervals.
- Triple –rinse empty containers is considered as a part of an integrated pest management system. Provide areas for emergency washing for those who might accidentally come in contact with chemicals.